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THE EXTRAORGANIC

By E. F. GREENMAN

TWO years ago the *American Anthropologist* published an article by me[1] in which some far-reaching statements were made concerning the relationship of the organic and the cultural. The chief thesis of that paper was that the manufacture and use of tools by the proto-human ancestors of man resulted in the evolutionary improvement of both brain and extraorganic implement in a recipro-causal manner. A closer examination since then of the literature on the evolution and development of the vertebrate nervous system has brought to my knowledge a process which provides a better factual basis for that conclusion than was given in that paper.[2]

The phenomenon of neurobiotaxis, with which the name of C. U. Ariëns Kappers is closely associated, is a physiological process by which the manufacture and use of extraorganic devices could have affected the primate brain in evolution. Neurobiotaxis is described as follows:[3]

> Comparative researches on the medulla oblongata and the mesencephalon (Ariëns Kappers, '07, '08a, '20) indicate that changes in position of the cell bodies are determined by a process of taxis or tropism, due to the stimulation of such cells and the bioelectric consequences of such stimulation which determine the selectivity of the neuronal connections and the differences between the dendrites and neuraxes, the so-called dynamic polarization of the neuron (compare with p. 79). By what means these processes are reproduced engrammatically under embryologic conditions, it is not possible to state at present. A similar statement applies to the entire ontogenetic development. Thus the formation of the extremities for walking and grasping can be explained only by use of engrammatic factors, the specific characters of which are unknown as yet. That the electrical potentials arising during evolution (Child, '21), the sequence of which may be determined by engrammatic factors, may play a part in this process is possible.

Differences in positions of cell groups attributed to neurobiotaxis are to be

[1] Greenman, 1945 (*See* Bibliography at end of article).

[2] Dr. C. Judson Herrick has read the present paper in manuscript form. I am indebted to him, and deeply grateful, for valuable criticisms and suggestions on a subject of which my own knowledge is based entirely upon the published literature.

[3] Ariëns Kappers, Huber, and Crosby, 1936, p. 76.

seen in the spinal cord, oblongata, midbrain and forebrain.[4] Under Résumé and Conclusions[5] is the following:

The phylogenetic differences in position of the cells of the motor nuclei suggest that the positions of the dendrites and the cell body are determined by the impulses which reach them. Further researches show that the determining influence is evident only in such cells as have a previous or indirect affinity for these impulses or lie in a region where these impulses accumulate. This affinity consists of simultaneous or successive states of action (stimulative correlation). Consequently a law governing nervous arrangement can be laid down. This law has long since been acknowledged to be one of the major laws governing the development of our mental capacities, that is, the law of mental association.

Herrick describes neurobiotaxis as

a principle which establishes that if in the nervous system, by a change in the mode of life of the species, a particular center receives its dominant stimuli from a new direction or by a different tract from the former connections there will be a tendency for the chief dendrites of the nerve cells of this center to be extended in the direction from which the new dominant nervous impulses are derived, and eventually the bodies of these neurons will migrate in the same direction. In the course of phylogeny many nuclei within the brain have changed their positions in accordance with this principle and the particular functional adaptations involved have been carefully investigated. . . . The applications of the principle of neurobiotaxis have been worked out in most detail in connection with the motor centers of the brain; but the principle applies equally elsewhere and many features of the nervous system, including the arrangements of correlation centers in the brain stem and the patterns of cortical localization of function, are believed to have arisen in accordance with it.[6]

The change during growth in the positions of motor neurons in relation to stimuli received by them is a process by which the use of extraorganic objects held in the hand can alter the structure of the brain, and it is likely that it played an important part in the passage of man's ancestors from a simian condition to that represented by Cro-Magnon and later types. This is hardly the selection of mutation, and it opens a door for a use-effect of a kind that is distinctive in neural evolution.

In the redistribution of neurons in each succeeding generation relative to stimuli received by them genes are not involved, for the stimuli are of a temporary nature and arise outside of the germ-plasm. Vertebrate evolution proceeds genetically by the building up of organic mechanisms through selection of small random variations[7] in the proper succession. One or more such small changes may bring new stimuli into the brain or send accustomed stimuli along

[4] *Ibid.*, p. 76.
[5] *Ibid.*, p. 92.
[6] Herrick, 1924, p. 196.
[7] Huxley, 1942, pp. 54–55, 115.

different pathways. It is obvious that if the positions of neurons are determined in successive ontogenies in relation to incoming stimuli, mutations involving changes in the structure of the organs of sense and movement could have influenced to an important extent the phylogenetic growth of the brains of animals throughout the whole period of organic evolution since the rise of the nervous system.

In ontogenetic development the new stimulus becomes reflected in neural structure and that structure is maintained as long as the new conditions in the adaptive organs last. The stimuli are temporary excitations in each ontogeny but their occurrence in each succeeding ontogeny maintains the related neuronal positions with a pseudo-genetic effect, until some further change arises through mutation in the organs from which the stimuli are ultimately received. Such a situation is recorded by Black for the teleosts, among which "the extreme specialization of any of the organs of special sense is followed by a corresponding amplification of the primary afferent nucleus or nuclei involved, together with a modification of the motor nuclear pattern in perfect harmony with the reflex needs of the animal."[8] The brain thus reflects the adaptations of animals, and the continual reaction between the neural and the adaptive mechanisms, the latter always following closely the requirements of the external world, played a large part in progressive evolution. It is to a considerable extent the *use* of the terminal organs that has produced in successive generations the neurobiotactical effects which are stabilized in the phylogenetic course. This is because the use of the volitional organs sets up proprioceptive sensations which return to the central nervous system with stimulative effect. "The enormous importance of these proprioceptive systems in the coordination and integration of bodily activities and as organic background of human behavior has only recently been fully appreciated."[9] Exteroceptive influences also reach the brain from the external organs of vision, touch, and balance, during the performance of discriminating manual acts, and these two types of stimuli become merged, with increasing complexity upward in the evolutionary scale, in the formation of the proper motor responses. The fact that instruments of human material culture are separate from the body is no barrier to the introduction of new stimuli into the central nervous system by their use. Objects of human material culture are extraorganic adaptations and have apparently interacted with the human brain in the same way as organic adaptations. None of the behavior patterns preceding the making and use of tools, in so far as we know them from observations on apes and monkeys, would have carried the brain beyond the simian level.

There is very little in the literature of genetics about neural changes which

[8] Black, 1917, p. 558.
[9] Herrick, 1924, p. 252.

arise through mutation or recombination. Huxley tends to regard the evolution of the central nervous system as allometric in character[10] and makes no reference to the genic control of neural structure. Dobzhansky, discussing types of changes produced by mutation, says that "Changes in the internal organs are observed mostly in connection with external changes; thus, the brain is changed in connection with the eye size and the presence or absence of the eyes."[11] I am indebted to the author for the information that this is a reference to recent work by Power, who was able to associate a mutational reduction in the eye of a fruit-fly with a diminution in size of the mass of unmyelinated fibers in the adjacent part of the brain and connected with the eye. This cannot be taken as an instance of a mutational change in the brain. Power's conclusion is as follows: "The data strongly indicate that the hypoplasia of the glomeruli is not a primary action upon the brain of the genetic factors studied but, rather, a secondary result of the ingrowth of a smaller number of centripetal fibers from the genetically reduced peripheral field (the eye discs)."[12] While the statement that the brain changes in connection with changes in external organs does not necessarily mean that it is changed in no other way, a caution must be entered that the literature of genetics offers no concrete evidence that the central nervous system, at least in its finer structure, is subject to mutation.

In the evolutionary advance of the animal form the gene has been the mechanism by which mutation and recombination have enabled living matter to adapt itself successively to water, land and air, and to all the minor conditions in each of those habitats down to the last ecological niche. Evolutionary progress has been largely a matter of continued improvement in the biomechanics of motion. The organism must act in relation to the external world, and this it does by movement, by avoidance or pursuit,[13] by the exercise of choice between the two according to the circumstances. Organic evolution is a pattern of exploitation of the environment by improvement of the implements of motion, of the body as a whole, and of its parts separately and in coordination. Parallel to this there has been a progressive widening of the patterns of volition, and on the evidence we are permitted to say that a living thing is as alive as its organic implements allow it to be. Its choice is as wide as its biomechanical ability, and the wider the choice, the greater the volition, the higher the intelligence. As Herrick has said: "Consciousness emerges within behavior as a new pattern of performance.[14]

Mutation and recombination have very obviously presented organisms

[10] Huxley, 1942, p. 539.
[11] Dobzhansky, 1937, pp. 18–19.
[12] Power, 1943, p. 64.
[13] Hogben, 1940, p. 251.
[14] Personal communication.

with whatever they need in the way of tools for the kind of material they must work on. These changes, we are informed, are at random.[15] But there is nothing random about the evolution of a bird's wing from the forelimb of a reptile. It is the direction of mutations with which we are concerned, the manner in which for example, small graded genic changes could bring the horse from a small three-toed animal 18 inches high to one four times as high with the central toe become a hoof and the others vestigial, a change which also involved, among many others, replacement of the materials of the soft toe with the harder substance of which the hoof is made. Such adaptive changes are explained by modern genetics as due to organic plasticity.[16] Organisms choose or find themselves in a certain environment, adaptive mechanisms form in relation to that environment, and the organism survives as long as the external condition is maintained. When that condition is changed it becomes extinct or adapts itself if mutation and recombination produce the right modifications. Organic matter as a whole is in this view completely plastic. It is always changing, in all directions at once within the limits of each organism's capacity to do so, in the alternation from gene to soma. We see the useful products because they enabled their users to survive, and we do not see the useless ones because they did not get beyond the early stages in the serial piling up of mutations. Since however, organs degenerate and become vestigial, mutations are of two kinds, progressive and regressive, and the formula of evolutionary mechanics can be stated thus: Mutations with evolutionary significance are selected in small sequential steps in progressive or regressive directions concurrently in a single hereditary line in relation to use or disuse. That is what happened in the evolutionary history of the horse and the whale and man himself, with his hundred and eighty vestigial organs.[17]

From the modern genetical viewpoint, in an evolutionary movement like that from a Dryopithecan or any other ancestor to Cro-Magnon, an almost inconceivable number of gene-controlled characters must have been involved, including the 14,000,000,000 nerve cells of the cortex. It meant that in every organ of this evolving succession of bodies there were changes in two directions, progressive and regressive in succeeding mutational, fragmentary and initially harmful[18] steps in the right order both ways so that each organ or specialized group of cells changed in relation to the modifications of every other in such a way that all were at a given time in precise adjustment to one another according to their functions. The brain must be in exact communication with the sense organs and the sensations of limb-movement, the lungs with the circulation of the blood; the relations must be maintained between simultaneous acti-

[15] Huxley, 1942, p. 22; Dobzhansky, 1937, p. 127.
[16] Huxley, 1942, p. 84; Dobzhansky, 1937, pp. 126, 127.
[17] Rogers, Hubbell, Byers, 1942, p. 312.
[18] Haldane, 1932, p. 187; Dobzhansky, 1937, p. 131; Huxley, 1942, p. 77.

vation and inhibition of muscles, and between tongue-movement and the tubercles anchoring the tongue muscles as speech developed. The focal distance of the eyes had to be held in proper adjustment to the distance of the hand from the body,[19] ability to discriminate sounds must keep pace with the increasing specificity of sound in the evolution of articulate speech, and whole groups of related readjustments had to be made as the body assumed the erect position and some parts became cumbersome or useless. If selection guides[20] random mutations into surviving forms we must suppose that the parts of one organ were changing at random independently of their functional connections with one another or with another organ. If progressive evolution takes place in this way it must be admitted that an almost unlimited number of groups of chance sequences are held in functional relationship to one another by chance, and that successful types were produced by selection of these small mutational steps even though individually they could hardly be important enough to be exposed to selection.[21]

The existence of such a process as neurobiotaxis would seem to obviate any need for mutational changes in the interneuronal connections, and it becomes a question of importance as to the manner in which neurobiotactical effects become incorporated into the germplasm, if in fact they do. The principles of orthogenesis[22] and organic selection[23] provide an acceptable answer if and when it is shown that mutation is the primary cause of change. If every member of a species for many successive generations acquires by neurobiotaxis a new adaptive structural pattern of nervous connections, the probability is enormously increased that a combination of mutations might appear which would perpetuate this structural pattern and stabilize it in the genetic organization of the species.

Neuroanatomists do not regard genetic effects within the central nervous system as sufficient by themselves to account for its evolution. Of neural evolution Tilney says "We may feel certain, however, that the progressive advances were due to the accumulation of slight changes which, modifying brain structure ever so little, ultimately made it more highly effective. Such changes in the different parts of the body are the result of a complex interplay of influences acting upon the animal as a whole."[24] In neurobiotaxis it is not necessary to resort to random mutation and selection though the gene may play a part in conferring through inheritance certain over-all morphological features of the brain based upon its past history. Herrick discusses the matter as follows:

The normal newborn child brings into the world an inherited form of body and brain

[19] Mott, 1907, p. 40.
[20] Huxley, 1942, p. 123.
[21] Robson and Richards, 1926, pp. 224, 316.
[22] Herrick, 1920, 1924, pp. 253, 308.
[23] Huxley, 1942, pp. 295–296.
[24] Tilney, 1930, p. 267.

and a complex web of nerve-cells and nerve-fibers which provide a fixed mechanism, common except for minor variations to all members of the race alike, for the performance of the reflex and instinctive actions. The pattern of this hereditary fabric can be changed only very slowly by the agency of selective matings and other strictly biological factors or by degenerations of a distinctly pathological sort. . . . But in addition to this hereditary organization the newborn child possesses the extensive associational tissues of the cortex with their vast and undetermined potencies, the exact form of whose internal organization is not wholly laid down at birth, but is in part shaped by each individual separately during the course of the growth period by the processes of education to which he is subjected, that is, by his experience.[25]

In any event the role played by the gene is not a simple one with respect to the nervous system. The concept of the gene, not as the vehicle of a character but as an element which initiates a unit process[26] is important, since not all the results that follow fertilization arise from the genes.[27] The physiological gradients and the organizers are active within the environment of the egg, and at a later stage the embryo develops within the environment of the body.[28] During these processes the nervous system becomes elaborated in relation to non-neural architecture,[29] and the same relation to the final environment is maintained to puberty and beyond. It would seem indisputable that the period from fertilization to puberty is the most important one in the understanding of vertebrate evolution, for the experiences of that period may through neurobiotaxis become permanent.

Evolution is not a simple matter of the production of new animal forms by the hereditary transmission of variations. Aside from selection a given biotype is the result of a great many factors, among the most important of which are the frequency of its mutations, its past history and its ontogeny.[30] In ontogeny the environment exerts an influence on the organism, which has to exist in a medium and develop and operate under its conditions. There are too many unknown variables in both genetics and the effects of use in ontogeny to justify exclusion of either from any particular observed change in anatomical structure. Ontogeny is a re-enactment of the main outlines of the evolutionary process, beginning with the single cell, in which the whole organism is created anew through the succession of different types of organization. Occurrences in ontogeny which are not yet completely understood are the regeneration of body-parts that have been severed, a phenomenon in which the nervous system plays a significant part;[31] the extent to which internal bone-structure and fiber-direc-

[25] Herrick, 1931, pp. 373–374.
[26] Haldane, 1942, p. 21.
[27] Huxley, DeBeer, 1934, pp. 59, 413, 397; Child, 1924, pp. 211, 213.
[28] Huxley, DeBeer, 1934, pp. 12, 50, 59, 135, 140, 142, 397, 438, 439.
[29] *Ibid.*, pp. 390–393.
[30] Huxley, 1942, p. 555.
[31] Huxley, DeBeer, 1934, p. 420.

tions of tendons are the result of mechanical rather than genetic factors;[32] and the movement of the time of appearance of characters toward one or the other end of the life-cycle.[33] Embryonic growth is to some extent a process in which characters are formed which originally did not appear until late in the life cycle in ancestral generations, and which arose out of the relations of those earlier types to their external environment. The question may be asked whether the backward drift of a character into the embryonic stage might not have important effects on the development subsequent to its appearance, including the elaboration of the central nervous system. Neurobiotaxis takes place among such other phenomena as these, and is but one of many processes the sum total of which is evolution.

Despite the improbability that chance mutations are arranged in usable order by selection, that is the most plausible explanation of the changes in the animal form that has been given to date. Keeping in mind that it is the animal's mode of behavior as directed by its brain that determines the order in which one mutation is added to another to change the character of an adaptive organ, natural selection still would operate in reference to neurobiotactically produced types, among animals that use extraorganic implements and among those that do not, though with man its influence is diminished because of his insulation from the natural environment. Man is the only animal which has not undergone adaptive radiation.[34] Adaptation has taken place in the extraorganic instead. These two facts by themselves are sufficient evidence of the importance of the reciprocal relationship between organism and artifact.

The entry upon a terrestrial habitat by the simian ancestors of the human stock was probably a gradual process arising out of conditions upon which we can only speculate. But these animals found themselves more and more in a world of detached, movable, solid objects of all shapes and sizes, and of different kinds of materials. It was a quite different geometry than that in an arboreal life. The various physical and geometrical properties of objects came to have practical significance in relation to one another, over and above any immediate gustatory value. Flat surfaces were distinguished from round, points from edges, the angular from the circular, and the estimation of weight, dimension and balance were refined. The realization that things could be fastened together as well as separated into pieces, and the mental detachment of objects from a configuration[35] were things that were slowly and painfully learned through the application of natural objects to various kinds of needs. These objects were adaptable to many uses without modification, the chief of which must have been defense against those animals from whose superior

[32] *Ibid.*, pp. 433–434.
[33] Haldane, 1942, p. 23; Huxley, 1942, p. 531.
[34] Huxley, 1942, p. 561.
[35] Koffka, 1925, pp. 196–197.

powers they had been secure in the trees. The usable materials were sticks and stones, shells, the bones and skins of other animals, the outer crusts of fruits, bark, materials like grass that were easily detached from their moorings, and the earth under their feet. Such things formed the basis of all human material cultures up to the late Neolithic, and in using them without alteration these pre-humans simply adopted a type of behavior which ants and wasps had entered upon millions of years before[36] From the beginning of this process onward the young developed in an atmosphere of the manipulation of loose, portable objects. At first these were handled largely in an aimless manner or out of curiosity, but this interest became more purposeful as practical effects were accidentally produced. The difference in the life of an individual ape between such an experience and the lack of it was illustrated by one of Köhler's chimpanzees. Failing to solve a problem with sticks, the animal was successful in the same problem four months later after having become accustomed during that period to those materials.[37]

The implements by which entry onto the ground was made safe were sticks selected for use as clubs, spears or daggers, and stones that could be thrown, with increasing accuracy and with a better reason than rage.[38] The possession of a strong pole six or eight feet long, and its use with little more than anthropoid intelligence, trebled the defensive powers of the individual and imparted a confidence which allowed him on occasion to detach himself from the group, and the throwing of stones may have led directly to the discovery of the uses of flint flakes. From such unmodified implements were eventually derived those that were made.

The purposeful alteration of natural objects for implementary use, something which no other animal had ever done with its hands, was of very great significance because new kinds of mechanical control and mental operations were involved. Using a stick or throwing a stone requires of the hand only a simple grasping ability quite similar to that necessary in the arboreal habitat, but in the actual making of implements in such processes as chipping flint and cutting with flake knives, the fingers came more and more to be used separately and the manipulative function was largely transferred to the finger tips, which acquired the high degree of sensitivity they now possess. If natural objects were cast aside after a brief use, artifacts, in consideration of the time and work expended upon them, came to be retained. They were present as models for the making of others, and different types of implements with which a group was equipped suggested combinations which resulted ultimately in the building up of a tool from different materials. Gradually, and very early,

[36] Rau and Rau, 1918, pp. 214–216; Isles, 1907, p. 260; Houssay, 1893, pp. 51, 55; Forel, 1930, I, pp. 356–357.

[37] Köhler, 1925, p. 209.

[38] *Ibid.*, p. 90.

groups found themselves in possession of instruments that would cut, pierce, carve, chop, strike, scrape, saw, grind and bind. This was a more varied repertoire of tools than any individual living thing had ever before possessed. Their use affected the neural constitution in the same way as the bodily organs with which all organisms had previously worked. An example of the correspondence of the brain with an adaptive organ, an implement in the organic sense, can be seen in the ant-eater, in which the highly specialized tongue is the animal's means of obtaining food. This specialization

> leads to a particularly great development of the lingual fibers and a consequent increase of this portion of the root and a close functional relationship of it with the visceral sensory centers of the tongue and the pharynx. As van Valkenburg ('11) pointed out, the variations in the position and shape of the descending root of the trigeminal are not to be regarded as chance conditions. They are due undoubtedly to the operation of neurobiotactic influences which tend to bring these fibers into closer relationships with the centers with which they are most intimately concerned, considered functionally.[39]

More complex effects upon the brain must result from visual, tactile and kinesthetic impulses arising from the use of a variety of tools, not necessarily upon the cranial nerves but especially upon the character of the association areas of the cortex, by which the human brain differs most markedly from those of the rest of the primates.[40] There is representation in the brain of the ant-eater of the movements of the tongue and of the entire jaw complex. But these movements are of a very simple nature as compared to those of the human hand, which can be applied to mechanically universal operations in fuller view of the eyes, giving rise to stimuli limited only by the geometrical and mechanical character of the objects themselves, and making necessary the ability to associate in the mind many recombinations of those conditions.

> The motor cortex seems to possess, or to be in touch with, the small localized movements as separable units, and to supply great numbers of connecting processes between these, so as to associate them together in extremely varied combinations. The acquirement of skilled movements, though certainly a process involving far wider areas (cf. v. Monakow) of the cortex than the excitable zone itself, may be presumed to find in the motor cortex an organ whose synthetic properties are parts of the physiological basis which renders that acquirement possible.[41]

The effect of the progressive refinement of the use of the forelimbs is clear from the following statement:

> Visual images are now (in the apes) always associated with impressions of the exploring hand, and the ideas of form, substance, extension, and qualities of objects are the

[39] Ariëns Kappers, Huber, Crosby, 1936, pp. 396, 398.
[40] Herrick, 1931, p. 349.
[41] Leyton and Sherrington, 1917, pp. 179–180.

complex of the visual and tactile kinaesthetic images and capable of endless variations. This we may connect with the appearance in the zoological series of an occipital lobe, a line of Gennari visible to the naked eye, a deep layer of pyramids with a double layer of granules in the visuo-sensory striate area.[42]

The two foregoing quotations have to do with the relation between the brain and the effector organs. The cause of this precise functional connection arose chiefly out of the use of the latter. The cortical regions and layers mentioned in the second quotation did not arise first and cause animals to investigate the environment more thoroughly. The neural apparatus improved in response to the use of the effector organs in the slow testing out of the environment, and to the change of those organs through mutation wherein their efficiency increased. Black[43] says of the teleosts (the italics are inserted) that "the specialization of effectors of whatever nature is also *followed* by an adequate corresponding adjustment of the reflex connections of the sensory and motor neurones involved." As the neural apparatus improved in evolution it imparted new directions to the mutations in the effector organs. This reciprocal relationship is the logical consequence of neurobiotaxis.

The gradual accumulation of complexes of extraorganic implements placed groups possessing them into specialized relations to the environment which forced the maintenance of material culture from one generation to another, giving rise to a very different type of behavior, with radically different stimulation of the brain in the formative years, than among their cultureless ancestors. There is no physiological obstacle to the continuance of this influence beyond puberty, for growth, in the ontogenetic sense, goes on in attenuated form throughout life.[44] Implements improved and a premium was placed upon attention and memory as longer intervals were devoted to their manufacture and especially as this process was interrupted by the fall of night or other circumstances. The route between anticipation and consummation, over which attention came into existence[45] became longer and less direct. The environment slowly assumed an immaterial aspect of the relations between things, of ultimate but not immediate practical value. For a million years or more these processes introduced a constant stream of novel stimuli into the brain as implements were improved and as efficiency in their use and manufacture increased. The primate animal gradually entered a new medium of moving mechanisms and subtle forces, which widened the powers of volition and increased the range of awareness. It was an environment in the most precise sense even though an artificial one, and it was to exert an effect upon the bodies of its occupants just as previous environments had done. This environment moved,

[42] Mott, 1907, p. 46.
[43] Black, 1917, p. 558.
[44] Huxley, De Beer, 1934, p. ix; Herrick, 1931, p. 350.
[45] Herrick, 1910, pp. 13–14.

through forces initiated in the body, but nevertheless out from and beyond the body as it employed the leverage obtained by the extraorganic. Two important forms of projectilism were specialized, sound as interorganic communication, and the thrown point. The effective use of a javelin demanded an increase in attention, exact calculation of distance, direction and weight, proper timing and coordination of vision and posture, and the consideration of some of these factors in making the implement. It gave rise to proprioceptive and exteroceptive impulses that brought new stimuli to the brain, with probable neurobiotactic results. An important cause of simian intelligence, as compared to that of other animals, was the habit of throwing their bodies from one branch to another.[46] Projectilism was never achieved with any accuracy by other animals and so it never left its mark on neural structure, but in man it was exploited to the utmost on an extraorganic level.

The use of sound as an implement of communication gave rise to articulate speech, which is the accomplishment of a highly specific effect at a distance from the body and therefore a form of projectilism. A spoken word is a projectile, and an implement quite as much as a knife. It is a physical thing made for a physical effect, the stimulation of the auditory apparatus with consequent action by the hearer. A spoken work is extraorganic, though interorganic in its use. In the rise of language, sounds made aimlessly or in response to affective states came to be selected for their effects, and articulation followed as the alteration of a sound for the purpose of making it more specific. The use of the various organs in altering the pitch, duration and terminal character of sounds was a manipulation of the raw product of the vocal cords. The whole process is identical with that in which sticks and stones were at first used in their natural conditions and later modified to become true artifacts. The essential mechanical identity and extraorganic nature of the two things is apparent in the fact that both have been subject to that process of differentiation through succession which we know as evolution.

Articulation involves the coordination of different organs and the muscles controlling them,—the vocal cords, lips, oral cavity, tongue, teeth, lungs, and the lower jaw. All of these factors partake in the production of sounds in rapid succession to form articulate words. Together they are a complex similar to the human hand, wherein the movement of the digits independently of one another in delicate manipulative operations involves rapidly successive and minutely balanced movements which are of the same grade of precision as those by which the various organs play their part in speech. In connection with the production both of articulate speech and artifacts proprioceptive stimuli were sent to the central nervous system, and the localized implementary fluidity they represented was far beyond that received from the same organs in a cultureless simian.

[46] Dorsey, 1925, p. 53; Huxley, 1942, p. 571.

Certain areas of cortex are differentiated for the neural control of speech in its various aspects, as is indicated by loss of those powers due to lesions of the areas controlling them. Lesions in Broca's area destroy the power to form words, which means only that that this region is concerned with the coordination of the muscles involved in word-formation. Understanding of the meanings of words is not involved.[47] In a similar manner the area of cortex connected with movements of the fingers has been mapped. The particular cortical point representing each digit of the human hand has been located, successively distant from the area for the hand as a whole, beginning with the little finger.[48] In a detailed study of this area in the chimpanzee, orang and gorilla the cortical points for independent movement of the digits of the hand were found to have an irregular distribution, with no such successive correspondence as that in the human cortex. Points were found for all digits except the ring finger in the chimpanzee, and the ring and little finger in the orang and gorilla. Out of a total of 448 of all kinds of movements elicitable by electrical stimulation, cortical points for 349 were found for the chimpanzee, 166 for gorilla and 117 for the orang.[49] A similar grading can be seen in the figures for the digits alone: chimpanzee 75, gorilla 31, orang 12.[50]

Though no areas for reading and writing have been localized on the cortex those abilities are among the phases of speech which can be lost through injury, when other aspects of speech remain normal.[51] This has interest in connection with the evolutionally recent invention of writing. Such cortical areas as these were formed as a result of the use of the various organs involved in speech, and of the fingers in the making and use of artifacts, through correlation of exteroceptive and proprioceptive impulses in the operation of neurobiotactical forces.[52]

Apes of their own accord use implements held in their hands but they cannot be trained to form or use words, and it is likely that language arose in part at least as a result of the use of tools. Increase in content and complexity of the extraorganic must have provided a strong motive for the elaboration of the simplest sounds, and speech, once begun, followed the creations of the hand. Before natural objects were purposefully altered in the making of tools, each successive day in the life of the proto-human animal was a series of routine procedures always with the same beginning and in much the same order. There could have been no carry-over from the previous day. But as technical processes in tool-making necessitated search for the proper materials or termination of a project with the coming of night, the activities of the following day would

[47] Ariëns Kappers, Huber, Crosby, 1936, pp. 1657, 1658.
[48] Herrick, 1931, Fig. 136.
[49] Leyton and Sherrington, 1917, pp. 150–154.
[50] *Ibid.*, p. 150.
[51] Herrick, 1931, p. 351.
[52] Ariëns Kappers, Huber, Crosby, 1936, p. 1659.

necessarily begin at that point in the series. Attention was in this way fixed upon time, and one result could have been the introduction of the tenses into the simple linguistic arrangements that prevailed. In later stages language became indispensable to the manufacture of more complex instruments.

It was to a great extent the use of the primate hand that gave the primate brain its distinguishing power.[53] The importance of the hand as a mechanism through which impulses of increasing refinement passed from extraorganic implements to the brain has not been overlooked by neuroanatomists. The claims for human material culture set forth in the present paper and in the one of which it is a clarification are consistent with the wider interpretations that most neuroanatomists put upon their data. Many such authors could be quoted to the effect that neural structure is largely a reflection of the relationship of the organism to its environment, and that is the view of geneticists in respect to the evolution of the animal form.[54] One neuroanatomist has said that "The more diversified conditions of life on land appear to require far more complex centers of higher correlation than those possessed by any fish."[55] It is equally apparent that life in the midst of material culture requires a better brain than that of any ape or monkey.

The environment of material culture certainly stands in the same relationship to the human brain as the natural environment to the non-human brain, as for example, the arboreal habitat to the early primates which, as so many evolutionists believe,[56] could not have given rise to humans without that training in brachiation wherein the hand, at first able only to curl itself around a cylinder, as F. W. Jones has said, achieved the power to contain a sphere, with an eventual refinement of the tactile sense at the finger tips which put its owner into neural and biomechanical contact with a multitude of environmental facets never before experienced by any organism. The acceptance of brachiation as a cause of simian intelligence compels agreement with the major theme of this paper, that the human brain was formed by the use of extraorganic implements. This logical necessity arises out of the fact that in arboreal progression branches stand in the same relationship to the central nervous system as artifacts, so far as neurobiotactical effects are concerned. Swinging from the branch of a living tree is as much the use of an implement as striking or poking with a detached section of a branch. The difference is that in brachiation the implement, i.e., the branch, is fixed and stationary and the body moves in relation to it, while in the extraorganic environment it is the implement which moves. The implement moves in obedience to the will of the organism, the gross move-

[53] Huxley, 1942, p. 570; 1941, pp. 243–244; Tilney, 1930, pp. 49–50; Herrick, 1926, p. 42; Jones, 1916, p. 162; 1942, p. 307; Dorsey, 1925, pp. 53, 70.

[54] Huxley, 1942, pp. 84, 206, 387; Dobzhansky, 1937, p. 13.

[55] Herrick, 1921, p. 452.

[56] Huxley, 1942, p. 571; Smith, 1912, p. 582; Jones, 1916, p. 179.

ments of whose body are thereby lessened and brought into coordination with more deliberate and particulate movements of the hands.

If the extraorganic did not bring about the passage from simian to human it would be the first time that a radically different environment was not the cause of the unique organism dominant within it.

At the proto-human level the mere manufacture of tools involved the coordination of sense impressions over and above use of the tools. But the secondary devices, chiefly of perishable materials and therefore unknown, must have had physiological and genetic effects. Fire and clothing enabled their discoverers to migrate into regions of lower temperature, with effects on population structure and the resultant differential gene distribution,[57] and the total material complex with the increased power over the environment given by it caused increase in population size with equally important genetic effect.[58] Fire and cutting implements complemented one another in the preparation of food and widened the choice of food materials. Clubs, daggers and spears gave them an advantage over other animals with which they had formerly competed at a disadvantage, and there can be little doubt that such early implements exerted a selective influence between members of the same group, and in intergroup warfare, with effects on mental and physical types and a related guarantee of the winning complex of weapons. Changes in the size of foraging groups and in the character of social organization are implied in the increased defensive power conferred by the simple spear or club, and by the tendency toward the establishment of a base of operations made necessary by the sheer bulk of a number of different kinds of implements. Such things as these accounted for early differentiation in physical type at the racial level, and for cultural variation, but neurobiotaxis was the directive mechanism that brought about the distinctly progressive evolutionary changes.

If, through neurobiotaxis, the use of tools increased the power of the brain in the passage from simian to human, that organ was brought into constantly better positions to exert its directive function upon the extraorganic constructions themselves, and material culture underwent an evolution of its own. Morgan says the same thing in respect to mutation which, once occurring, will, if followed by another in the same direction, have "a better chance of producing a further advance since all individuals are now on a higher level than before."[59] Morgan is not here talking specifically about the brain but his remark applies to that organ, in respect to neurobiotactically determined changes in animals as well as in man, and in relation both to the improvement of organic and extraorganic adaptations. Among animals there is a correspondence between the forebrain index and the type of limb termination,[60] a condition which

[57] Dobzhansky, 1937, pp. 13, 14, 185; Huxley, 1942, p. 61.
[58] Dobzhansky, 1937, pp. 131–134.
[59] Morgan, 1925, p. 148.
[60] Tilney, 1928, pp. 941–942.

may have been brought about by neurobiotaxis. In human history there is a correspondence between the evolution of the brain and that of the extraorganic limb terminations.[61] There is no reason to believe that the cause of this condition was different for humans than for other animals. Unless this correspondence is without meaning, human culture could not have become improved through the lower paleolithic complexes to the Aurignacian and following types. If, for example, Pithecanthropus was able to use a pointed stick as a weapon he could not, in this interpretation, have been trained to the skilful use of a bow and arrow, nor in the construction of such a mechanism. It was no sheer autonomous creative faculty that produced more complex and efficient tools, but a much simpler ability, that of perceiving the possibilities of combining objects or processes seen in accidental adjacency or juxtaposition[62] in the proper context. This ability is possessed by insects[63] and birds.[64] It formed the basis of many of Köhler's experiments with apes,[65] and human behavior often depends upon it.[66] The acquisition and evolution of human material culture cannot be satisfactorily explained as simply a direct result of any autonomous expansion of the powers of the brain. Neurobiotaxis gives a rational explanation of the directive trend of neural improvement.

If it was the extraorganic that was responsible for the evolution of simian to human, it is important to the understanding of the nature of human life. Evidence in favor of that view has been presented in detail. By way of summary and simplification the process of reasoning involved may now be stated in its main outlines.

It is improbable that evolutionary changes in the vertebrate nervous system result from random mutations apart from other contributing factors.

The nervous system does undergo evolutionary changes through neurobiotaxis.

The most significant anatomical difference between humans and the other primates is in the brain.

It was necessarily a physiological process that made possible the change from the simian to the human brain.

Neurobiotaxis is a physiological mechanism by which the effects of the use of tools may alter the neural structure of all members of the human community. This structure may be maintained by the external conditions indefinitely, and provide the basis for further changes arising through the operation of neurobiotaxis; or, it may provide favorable conditions for the preservation of

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[61] Greenman, 1945, p. 219.
[62] *Ibid.*, pp. 212, 215.
[63] Rau and Rau, 1918, pp. 214–216.
[64] Skutch, 1945, p. 366.
[65] Köhler, 1925, pp. 130–133.
[66] *Ibid.*, pp. 196–197.

useful combinations of mutations and so stabilize the behavior in question in the genetic organization.

In its general thesis this paper is concerned only with the differentiation of the human stock from the rest of the primates. It is another matter whether, once humanity was achieved, there was any further improvement of the central nervous system in correlation with each new refinement of the extraorganic means of living. While there is no reason to believe that neurobiotaxis has ceased to be a decisive factor in human evolution it is not necessary to suppose that it has been as important in relation to material culture since the paleolithic as it was previous to and during that period. Evolution has in the past operated in different ways at different times, and it is likely that the principle of neurobiotaxis is at present playing a directive role, if at all, in relation to social rather than technical behavior. At the same time it may still account for the maintenance of neural structure which is not transmitted genetically, by responding to constant features of the cultural environment. Current thinking on the nature of human culture must take into account the fact that it is not in itself a unitary thing, and not the same in its operation at all times during evolution. The conclusion may be drawn from the facts presented in this paper that in the early stages of human evolution material culture cannot be regarded as on a different level and largely independent of the human organism. The relation to the organic of those departments of human behavior called non-material, and just what things belong in that category, are more obscure.

The existence of the social sciences is but a reflection at the research level of the pre-occupation of human beings with one another, a very ancient interest. The human organism itself has been the instrument *par excellence* ever since one individual found himself with the means of effective control over the behavior of others. A great part of human culture has been built up around that means of power, and that part has the organic both as origin and goal. On the other hand the human body itself has in the past thirty thousand years become increasingly a cultural product, a development which was accelerated upon the advent of agriculture and, in more recent times, by advances in medicine and surgery. These and other considerations tend to lessen the gap between the cultural and the organic when they are viewed against the background of evolution.

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ATTITUDES AND ACCULTURATION[1]

By LAURA THOMPSON

AMONG the tests administered by the Indian Education Research staff[2] to a thousand selected Indian children, aged 6 to 18 years, from eleven communities in five tribes, was a guided interview of the Piaget type, designed to reveal a belief in immanent justice, and adapted to Indian children. The details of the test and the findings therefrom are presented in a forthcoming paper by Robert J. Havighurst.[3] Here it will suffice to note that whereas Piaget's and Lerner's well-known experiments on white children revealed a significant drop with age in the number of children giving responses indicating a belief in immanent justice,[4] the present Research revealed that in no Indian community studied, regardless of degree of acculturation, was there a statistically significant decrease in the number of responses indicating such belief. Indeed, the findings indicate that belief in immanent justice increases significantly with age in several of the communities studied.

These results point to the presence, among these Indians, of certain attitude patterns differing from those of the white children tested, and persisting in the acculturation situation. In the present paper an attempt will be made to follow this lead and to investigate briefly certain basic orientations among the tribes studied.

The Dakota Sioux

According to Gorgon Macgregor, the religion of the Dakota Sioux, a Plains hunting tribe,

> was based upon a belief in a great supernatural power which dwelt in the sky, the earth and the four cardinal points or the four winds. Since life depended upon this power and from it came all good and necessary things, the Dakota believed that it must be invoked for the welfare of the tribe and for individual success in the daily tasks of life. It was also believed that the people must follow a moral life, express friendship to one another, and strive to perform their proper functions as men, women, and children. Otherwise the elements of this power would take revenge by sending sickness and other misfortunes. Hence a series of rituals was developed to show reverence to the great power, invoke its strength, and atone for misdeeds . . . Wakan Tanka, whom the Dakota invoked for tribal and personal welfare and assistance, was . . . an all-pervasive, mysterious power. It accounted for the appearance of the buffalo, the storms, exceptional bravery or wisdom in men, and peculiar and otherwise inexplicable behavior. Wakan

[1] This paper was delivered at the annual meeting of the Society for Applied Anthropology, New Haven, in May, 1947.

[2] The Indian Education and Administration Research is a large cooperative project, now in its sixth year, sponsored by the U. S. Office of Indian Affairs, the University of Chicago's Committee on Human Development, and the Society for Applied Anthropology.

[3] *See* Havighurst, Mss.

[4] Piaget, 1932, p. 250; Lerner, 1937.

Tanka encompassed all Dakota deities . . . The Dakota . . . did not conceive of a clear-cut divine hierarchy or organization . . . This lack of development of a systematized authoritative power which ordered the universe or demanded obedience seems in keeping with the religious emphasis of the Plains Indian: to acquire power for himself. . . To achieve power, a boy or man had to seek it by going alone into the plains, where the supernatural power of the universe might come to him in the form of some animal or bird to be his guardian spirit. Here the candidate . . . humbled himself by fasting and telling of his poverty and weakness and by enduring self-inflicted torture.[5]

From Macgregor's account it appears that: 1. The traditional Dakota world is pervaded by a great, mysterious power which encompasses all the supernatural, though without a clear-cut organization. 2. Men, both as individuals and as a group, are dependent on this power and must humble themselves and supplicate it for successful living. 3. There are sanctioned mechanisms to accomplish this, both for the individual and for the group. 4. Power in this hunting society reveals itself at the individual level mainly by success with animals (i.e., success in hunting) and entails the winning of an animal guardian. 5. If man does not fulfill his role in the scheme he will suffer sickness or other misfortune (i.e., the traditional Dakota world-view includes a belief in immanent justice).

Despite the fact that the Dakota's traditional mechanisms for obtaining power (namely, their ceremonies) were officially banned from 1881 to 1933 and far-reaching changes occurred in their economy and social life, the test findings indicate that 100% of Dakota adolescents in the less acculturated community studied (Kyle) and 92% in the more acculturated community (Pine Ridge) believe that a principle of immanent justice is operating in the world.[6] Assuming that, along with this belief, the Dakota have retained the skeleton of their traditional world-view (i.e., that the universe is permeated with power and that man needs power for successful living), we would expect them to feel helpless and fearful before overwhelming odds and to feel unable to cope with their problems, as though they had been deprived of their tools for acquiring the power needed to handle life situations.

Reviewing the Dakota Research findings from the other tests, we find that:

The largest number of responses from the Emotional Response and Moral Ideology tests suggest that the predominant behavior and emotions of the children are reactions to . . . a world that is threatening and bearing down upon them, causing them great concern about themselves, and restraining them in their interests and associations with other people. In the social relations of the children, most action is, or seems to them to be, initiated by others. . . . People are not the only menacing beings in the children's world. Animals, which are so abundant in their environment, are also frightening and hostile. . . . [The children's] concern over themselves takes the form primarily of

[5] Macgregor, 1946, pp. 85, 87.

[6] Havighurst, *op. cit.*

anxiety over being sick, injured, or in pain, which causes them both fear and sadness. . . . [7]

The findings from the Emotional Response and Moral Ideology tests adumbrate those of the Thematic Apperception and the Rorschach. For example,

From the stories and fantasies given in the Thematic Apperception Test, we learn again that Dakota children conceive of the world as a dangerous and hostile place. . . . In their uncomfortable surroundings they often become sick and tired. . . . The total effect of their environment on the children . . . is the generation of a great deal of insecurity, lack of definiteness and recognized purpose, indecision, and passivity. . . . The Rorschach Psychodiagnostic Test . . . indicates that Dakota children, in fear of what may happen to them, stifle their impulses and energy and their emotional reactions to people and situations around them.[8]

From this brief account of the Dakota Research findings it appears that an over-all orientation concerning the nature of the universe and the role of men and animals in it persists among these Sioux Indians despite loss of their hunting economy, most of their hunting grounds, their ritual, and much of their social structure.

The Northern Ojibwa

The Sioux picture is clarified by a glance at A. Irving Hallowell's findings on the Northern Ojibwa, a loosely organized, Eastern Woodland hunting tribe whose basic traditional attitudes somewhat resemble those of the Dakota. It should be remembered that originally the Sioux were an Eastern Woodland group, bordering on the Ojibwa who pushed them onto the plains in historic times.

To the unacculturated Ojibwa, according to Hallowell, man is helpless in the face of overwhelming environmental odds. Without constant help from superhuman entities, who act as man's guardian spirits, he is in danger of sickness and misfortune.

The Northern Ojibwa . . . take a supplicant attitude toward entities with superhuman powers. Among them *anicinabek* (men) are always the 'receivers'; the *powaganak* or *manitok* are always the ones who give help and 'bless' human beings. They pity men and take cognizance of their needs, especially in misfortune. Human beings are conceived as being in constant need of help from birth to death. So essential is such help that no performance of any kind is interpreted as due to an individual's own abilities or efforts. Leadership, too, always is the result of bestowed blessings. . . . [9]

Success depended as much upon a man's satisfactory relations with the superhuman 'masters' of the different species of game and furbearing animals, as upon his techni-

[7] Macgregor, 1946, pp. 190, 192.
[8] *Ibid.*, pp. 205, 206.
[9] Hallowell, 1947.

cal skill as a hunter and trapper. In psychological terms these entities were among the great 'givers,' who bestowed extraordinary powers upon men, who acted as their 'guardian spirits' and without whose 'blessings' and assistance, a satisfactory human life was thought to be impossible.[10]

It might be assumed that traditional Ojibwa attitudes and beliefs so closely associated with their economy would disappear with a breakdown of hunting under white pressures. Actually nothing of the sort occurs. Hallowell states:

This attitude toward life is deeply rooted in Ojibwa character and is thoroughly in accord with other data on these people as those obtained by projective techniques (Rorschach). It can also be observed in actual behavior and still persists even under acculturation. Since leadership has no secular sanctions, and this old attitude persists, no vigorous leaders emerge, and the Government has come to symbolize the ancient 'givers.'[11]

The Ojibwa material not only contributes toward our understanding of the basic hunting orientation of the Sioux but also to its persistence under white pressures. For the resemblance between the acculturated Ojibwa, as described above, and the Dakota, described in *Warriors without Weapons*,[12] is so striking as to need no elaboration. The Ojibwa data reinforce our inference regarding the persistence of basic attitudes among the Sioux despite far-reaching changes in their economy, social structure and religious forms. They also suggest that the Sioux orientation is rooted far back in the tribe's Eastern Woodland prehistory.[13]

The Navaho

We now turn to the Navaho who, among the tribes studied, fall roughly near to the Sioux in simplicity of social organization, and who have added agriculture comparatively recently to their basic hunting economy, and herding still more recently. According to Clyde Kluckhohn and D. C. Leighton:

The universe of The [Navaho] People contains two classes of personal forces. There are the Earth Surface People, living and dead; these are ordinary human beings. Then there are the Holy People . . . They are 'holy' in the meaning of 'powerful and mysterious,' of belonging to the sacred as opposed to the profane world . . . They have great powers to aid or to harm Earth Surface People . . . The Holy People are not portrayed as all-knowing or even as all-powerful. They certainly are not depicted as wholly good. While they are supplicated and propitiated, they may also be coerced. Probably coercion is indeed the dominant note . . . The Navaho's interest is focused upon restoring the harmony within an individual and between that individual and other persons or

[10] Hallowell, Mss.

[11] Hallowell, 1947.

[12] Macgregor, 1946.

[13] Incidentally, on the basis of this material one might hazard a guess that, were the Northern Ojibwa children given the Immanent Justice test, they might respond somewhat as the Dakota children responded.

supernatural forces . . . Although Navahos worry about property loss or damage, their fears are primarily focused upon illness and death . . . Disease . . . is the result of violation of a taboo or of attack by one of the Holy People, a ghost, or a witch . . . The Navaho notion is that the universe works according to rules. . If one can discover the rules and follow them, he may remain safe or be restored to safety—and more. The divinities must themselves bow to the compulsion of ritual formulas . . .[14]

Notable in this account of Navaho attitude patterns, compared to those of the Sioux and Ojibwa, is that instead of the universal, mysterious power-pool of the hunting tribes, we find power focused and localized in countless disparate personal entities who are characteristically unreliable and dangerous. The powerful and mysterious Holy People may attack and bring sickness on human beings or they may aid them. But also Earth People, in the form of witches and ghosts, may exercise power and bring sickness. By following a great many detailed rules and using the appropriate ritual formulas literally, however, man can compel and propitiate the superhuman entities to aid him in restoring harmony within the individual and between the individual and other persons or superhuman forces. To the Navaho, it appears, man is not so much the helpless supplicant to superhuman helpers and guardians as he is the infinitely painstaking, personal ritualist who, by doing what he should and not doing what he should not, strives for order within himself and in his relations to others, both human and superhuman. If he fails to observe the taboos, however, misfortune will follow, probably in the form of sickness, and in this sense the research findings on the prevalence of a belief in immanent justice among the Navaho fit into the environmental context.

But what happens when the Navaho come into contact with white culture to the extent that, as at Shiprock, they engage in irrigated agriculture, commercial livestock production, and wage work, attend missions and schools, and are exposed to high-pressure government? Quoting Leighton and Kluckhohn:

Shiprock is the center of anti-white feeling and resistance to government programs for the Navahos. The peyote and certain other religious cults flourish here and have strong anti-white associations. Witchcraft talk is common. In short, all the available facts suggest that this is an area of marked uneasiness . . . which finds outlets in emotional religious cults, in opposition to the government, and in the expression of aggression against other Navahos through witchcraft and numerous quarrels.[15]

In terms of basic attitudes, here again we see persisting the traditional tribal orientation regarding power, with emphasis shifting from superhuman to human power entities. This is manifest in behavior by a heightened apprehension regarding witches and an increased use of ritual for their control. It is also manifest, as among the Sioux and Ojibwa, in a transfer of attitudes for-

[14] Kluckhohn and Leighton, 1946, pp. 122–125, 171, 132, 147, 156.
[15] Leighton and Kluckhohn, 1947, p. 125.

merly oriented toward traditional power entities, to the government. Whereas the indigenous dependency attitude toward superhuman powers among the hunting tribes tends to become, in the acculturation situation, a dependency attitude toward the government, the coercive attitude toward power entities among the Navaho tends to become a coercive and resistant attitude toward "other people" and the government. Also, among the Navaho as among the Sioux and Ojibwa, the focus on illness in the power equation persists.

Such an interpretation is substantiated not only by observations of actual Navaho behavior, but also by the test findings. It appears from the Emotional Response and Moral Ideology test responses that, compared to white children, "fear plays a large and important role in Navaho life and much energy is devoted to expelling the presumed sources of it."[16] Moreover, "more than a third of things feared and of Worst Things can be categorized as 'supernatural'."[17] However,

> at Shiprock the small children frequently named the *ch'iidii*, which is variously translated 'ghost' or 'evil spirit', as a thing that frightened them, while older children rarely spoke of it. At Navaho Mountain, on the other hand, children of all ages spoke of the *ch'iidii* freely . . . The *ch'iidii*, 'witches' and animals of supernatural associations, are feared in large part because they are believed either to produce illness or to warn of approaching illness or death.[18]

Thus, on the basis of observations and test findings, there seems reason to assume that a basic orientation regarding power, its effect on man, and its manipulation persists also among the Navaho in the acculturation situation. Moreover, certain resemblances between the attitudes of the hunting tribes studied and the Navaho, such as the individualistic approach toward power and its effect on the individual, point to the inference that the Navaho orientation is closely related to, and deeply rooted in, the former hunting lifeway of the tribe, at the same time that it has been adapted to recent conditions.

Now we note that at Navaho Mountain, the most isolated Navaho community studied, 97% of the responses of adolescents indicated a belief in immanent justice, whereas at Shiprock only 58% did so, the lowest score on this test of all the communities studied.[19] The increased emphasis on the power of human beings in the context of a loosely knit, composite culture may account for the appreciable decrease in the prevalence of a belief in immanent justice.

In this survey of basic attitude orientations, there remains to note those of the traditionally agricultural tribes studied; namely, the Papago and the

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[16] *Ibid.*, p. 164.
[17] *Ibid.*, p. 168.
[18] *Ibid.*, pp. 163, 168.
[19] Havighurst, *op. cit.*

Hopi.[20] Both these tribes have practiced farming for some 2,000 years, according to archaeological and ethno-botanical evidence.[21]

The Papago

According to Ruth Underhill, the supernatural world of the Papago

> is permeated by power which is helpful or destructive according to the medium through which it passes. A good being, human or supernatural, will use it for good; a bad one for evil. And the same being will change from time to time. Thus I'itoi and Earthmaker are not opposed forces, like God and the devil, both in turn benefit man; then both mishandle their power and harm him. So the animal guardian spirits can turn unfriendly and send diseases. So the shaman can change from a healer to a sorcerer. The fear of power is an underlying motive in Papago religion quite as much as the reverence for it. A man who has obtained power through vision or ceremony is regarded with apprehension as well as respect . . . The shaman, greatest recipient of power, is also the only villager who can be killed with impunity . . . Contact with the supernaturals was achieved by two methods that differ so much that they amount to separate religious systems. On the one hand was a calendric round of ceremonies, conducted by a priestly hierarchy and bringing blessing to the whole community. It was a system of group control, in which the average man made no individual approach to the supernatural and received no individual power . . . The blessing he received was the general one of well being for his village.[22] [One such ceremony was the quadrennial *wiikita* whose avowed purpose was to keep the world in order.[23]] Opposed to this was the . . . concept of the guardian spirit, opening the power quest to everyone. Formerly a Papago expected no success in life unless he had met some spirit tutelary who had given him a song for use in time of need.[24]

The attitudes revealed in this account are unusually interesting when compared to those of the other tribes studied. For here is evidence of a basic orientation resembling that of the hunting tribes; namely, a power pool whence the individual may obtain power for himself through an animal guardian acquired by means of a vision quest, and also the notion that the misuse of power brings sickness. As with the hunting tribes, also among the Papago:

> Individual superiority and power were thought to come as a gift from the supernatural—not to be conquered by patient and planning labor, not connected logically with personal merit, but bestowed in a dream to those esteemed worthy in a mystical sense.[25]

With the Papago, however, man is not a helpless suppliant for power nor is his guardian always helpful. But in addition to this hunting pattern there is

[20] Analysis of the Zuni Research findings has not been completed.
[21] *See* Carter, 1945.
[22] Underhill, 1946, pp. 16–17.
[23] *Ibid.*, p. 133.
[24] *Ibid.*, p. 17.
[25] Joseph, Spicer, and Chesky, 1948.

evidence among the Papago of a basic orientation which, as will be seen in the Hopi sequel, resembles that of the highly organized, agricultural pueblos. That is, the power source is conceived as a system of forces requiring communal ceremonies to keep it in order. Moreover, the hunting orientation and the agricultural orientation appear side by side in Papago culture without marked integration.

In other words, the Papago, on one hand, seem to have retained their mechanisms for obtaining personal success in life from their hunting progenitors at the same time that they have lost the feeling of personal helplessness of the hunting tribes; while on the other hand, they have acquired additional mechanisms, communal rather than individual, designed to preserve order in the world and bring well-being to the group. It seems that the Papago, who until very recently spent the summer farming at their "Fields" villages (located in the valleys where they were watered by summer flash floods) and who spent the winter hunting at their "Wells" villages (located in the mountains and watered by springs and wells), have a double set of attitudes to meet the needs of their traditional dual residence and economy pattern.

Again the test findings supplement the basic attitude picture. The Emotional Response test reveals that fear of animals is strong in Papago children, being the source of 54% of the fear responses from Hickiwan, the less acculturated Papago community studied, and 40% from Topawa, the more acculturated.[26] Moreover, sickness is considered by both groups as the worst of all possible things that can happen, being mentioned in 30% of Hickiwan and 36% of Topawa responses to this question.[27] Also, as chief sources of sadness, sickness and death rank highest—accounting for 41% of the Hickiwan responses to this question and 43% of those from Topawa.[28] These findings take on meaning in the context of a traditional world view wherein animals are considered to be potential guardians who may bring not only good but also evil, conceived in terms of sickness. Moreover, apparently, loss of the vision quest through white influence has not been accompanied by loss of the Papago guardian spirit orientation but may rather, in conjunction with other ritual losses, by reducing man's sense of his own security in their protection (fluctuating though it be), have contributed toward heightening his uneasiness regarding animals and sickness.

That these attitudes are learned early in life is noted by Jane Chesky, who writes:

> Long before he is five years old, the Papago child knows and fears sickness. He has already learned that contacts with animals and with ghosts appearing in animal form may make him ill. Now he is taught that his own bad thoughts may also bring sickness.

[26] *Ibid.*
[27] *Ibid.*
[28] *Ibid.*

When his elders warn him against quarreling, they tell him that the sort of thoughts that lead to quarrels will make him sick. He also has learned to fear the power of the 'bad' medicine man or witch.[29]

This statement throws light on the findings regarding the belief in immanent justice among the Papago, indicated in 91% of the adolescent responses from Hickiwan and 87% of those from Topawa.[30] Here we note also a slightly more complicated view of immanent justice than that of the traditionally hunting tribes that have been discussed. Not only external agents, but also one's own "bad thoughts" leading to quarrels, may bring sickness to the peace-loving Papago. We shall see presently that this concept is elaborated among the peaceful, agricultural Hopi.

Turning now to the projective test results, we find clearly revealed the dual orientation, suggested above, of a folk who are at times hunters and at other times agriculturalists. According to Alice Joseph:

> Of good vitality, quite vivacious, and spontaneous in their emotions, the [Papago] children display toward the world and its stimulations an attitude strangely composed of acceptance and almost negativistic rejection . . . In this sort of withdrawal that usually does not appear to develop into definite introversion but to be an intermittent reaction, the Papago child temporarily stops functioning as a social being and—quite legitimately according to his culture—isolates his personal drives of disturbing strength or direction in the imaginings of his mind.[31]

In other words, the Papago has two types of reality to choose from and he fluctuates back and forth between them. The Papago is the only tribe studied wherein the well-adjusted individual reveals what, if found in our culture, would be diagnosed as a tendency toward a schizoid mental approach.[32] Joseph continues:

> Together with this reaction goes a tendency to evade commitments whenever possible and a tendency to avoid clear categorization of concepts.[33]

This withdrawal pattern, which in traditional Papago culture apparently operates as a ready and almost automatic control on occasions of stress and conflict, seems to become under the constant stress of white pressures an established introversion instead of being an intermittent reaction, with a relative loss of spontaneity and a gain in clarity of conceptual categorization.[34]

The Hopi

Lastly, we shall consider the Hopi, who in contrast to the other tribes surveyed, are closely organized farmers.

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[29] *Ibid.*
[30] Havighurst, *op. cit.*
[31] Joseph, Spicer, and Chesky, 1948.
[32] Bruno Klopfer, Personal communication.
[33] Joseph, Spicer, and Chesky, 1948.
[34] *Ibid.*

The Hopi conceive the cosmos as a complex ordered structure regulated by an inherent logical Principle. According to Hopi ideology, all phenomena relevant to Hopi life—including man, the animals and plants, the earth, sun, moon, and clouds, the ancestors and the spirits—are interdependent through an innate, dynamic Law. According to this Law, the various orders and suborders of the over-all universal scheme work together for the common weal by exchanging values or services, which are essentially equivalent but not identical. Man, the elements, the animals, plants and the the supernatural powers interact in an orderly fashion, by means of a complex set of correlative interrelationships, for the good of all.[35]

The various orders and suborders. including the supernatural, the animals, and man, form a sort of super-society which functions like a universal man-nature cooperative. Each entity in this scheme has a definite place, role and function, but man is distinguished from the rest of nature in that he is able to exercise a certain limited but positive measure of control over the universe.

Indeed the Hopi believe not only that man can positively affect the functioning of the external world of nature to a limited extent, but that in the measure that he fails to do do so, the harmonious functioning of the universe will be impaired. To the Hopi the movements of the sun, the coming of rain, the growth of crops, the reproduction of animals and of human beings depend (to a certain extent at least) on man's correct, complete, and active participation in the fulfillment of the cosmic Law. Moreover, the Law requires that, to be effective man must participate in the universal scheme not only at the overt behavioral level—that is, by performing certain rites at prescribed intervals in certain ways—but he must participate also at the emotional and ideational levels—that is, by a concentration of his psychical energy on praying or willing . . . Hopi traditional philosophy, therefore, ascribes to man a purposive creative role in the universe, a role which is dependent on the development of his volition. The universe . . . is a harmonious, integrated system operating on the principle of immanent justice, and in it the key role is played by man's will.[36]

Although the Hopi manifest a protective and conserving attitude toward hunt animals and food plants, not only is the vision quest absent but there are few if any ceremonies which stress the individual as such, practically all Hopi ritual being of the communal type in practice, in intent, and in emphasis. It should be noted that the welfare of the group and its crops, rather than the welfare of the individual and personal illness, is the focus of ceremonial attention. Hopi health and diet, however, are not superior to those of other tribes, so far as may be determined from available diet studies and medical examinations.[37] Furthermore, the findings of the Emotional Response test reveal that Hopi children rank sickness (32.3% of all responses) as the very worst thing that can happen,[38] and mention sickness (24.6% of all responses)

[35] Thompson, 1945, pp. 540–541.
[36] *Ibid.*, pp. 541–542.
[37] For an account of Hopi health and diet, *see* Thompson and Joseph, 1944.
[38] *Ibid.*, pp. 99, 145.

and death (24% of all responses) more than anything else among occasions associated with sadness.[39]

Here should be noted that, among the Hopi, sickness is usually considered to be the result not only of unlawful behavior but also of "bad thoughts."[40] Also significant is the fact that Hopi children from Oraibi, the community which has lost most of its traditional ceremonies (and incidentally has a resident white physician in normal times), appear from the test findings to be more concerned with sickness and death than those from First Mesa, the community which still activates annually a nearly complete ceremonial cycle. That loss of the Hopi ceremonies has not meant loss of belief in immanent justice is indicated further by the Hopi responses to the Immanent Justice test. Indeed, at Oraibi 90% of the adolescents' responses indicate a belief in immanent justice, while only 84% of those from First Mesa do so.[41] The findings also indicate that there is an emphasis on negative social sanctions at Oraibi compared to an emphasis on positive ones at First Mesa, immanent punishment rather than immanent justice being stressed.[42] Finally, the Oraibi people frequently display anti-government behavior and attitudes, while those of First Mesa are usually cooperative with the Agency staff.

In sum, with the Hopi, it appears that the power pool of the hunting tribes has become a full-fledged, law-bound system, and man, far from being conceived as a helpless supplicant to his supernatural guardians, is in his own right a power in a correlative cosmic scheme, which demands of each individual a high degree of emotional, intellectual and volitional development for the fulfillment of his distinctively human role. At the same time, in the Hopi world view may be detected traces of the hunting orientation found in well-developed form among the Ojibwa, the Sioux, and also among the Papago as one facet of their dual adjustment, and even among the Navaho as the basic pattern, recently redirected toward a composite hunting-farming-herding life-way.

CONCLUSIONS

1. Although outwardly the tribes studied appear today to be very different from one another and, when subjected to closer scrutiny by means of psychological tests, most of these differences do not decrease but rather become more specific,[43] the analysis has indicated certain similarities in basic attitudes between them which, upon investigation, suggest relationship to, or development from, a formerly widespread hunting world-view. This world-view is

[39] *Ibid.*, pp. 98, 145.

[40] *Ibid.*, p. 99.

[41] Havighurst, *op. cit.*

[42] Thompson and Joseph, 1947, p. 21.

[43] *See* the findings of the Indian Education and Administration Research, U. S. Office of Indian Affairs, Washington, D. C.

best illustrated among the tribes surveyed by that of the Northern Ojibwa. Among these Indians, man is conceived as a helpless suppliant for power (without which he cannot succeed), available to him from a universal, mysterious power pool only through disparate non-human entities, chiefly animals, whom he may obtain as personal guardians through appropriate rituals. It should be noted that animals to the Ojibwa hunter are man's superiors, and nearer to the power source than he. There is no hint in the Ojibwa outlook of the exploitative relationship between man and nature so characteristic of modern American culture. On the contrary, the relationship is that of helper and helpless, guardian and ward—the non-human entities being the helpers and guardians, and man being the helpless ward who takes great care, lest he fall ill, not to offend his benefactors by wanton destruction of life in any form.

2. Here we seem to have isolated what, for want of a better term, I shall call a "pre-domestic-animal world-view" and one which, it appears, persists in somewhat changed orientation in all the tribes studied and probably elsewhere among the American Indians. With the development of a more systematic control of the food supply by means of social organization and farming technologies, man's concept of himself, in relation to nature and especially to animals, apparently changed from that of a helpless supplicant toward disparate superhuman guardians who controlled the power supply, to that of a power entity in a correlative system wherein his distinctively human role, including the development of his will, was indispensable. Nevertheless, he remained the conservator and protector of life in all its forms, and the propitiator of animal guardians, some of whom came to be regarded as peers. Moreover, he still believed that the universe was immanently just and that sickness was due to his failure explicitly to fulfill his role, although that role was extended to include not only observation of the rules at the overt-behavioral level but also "keeping a good heart."

3. Throughout the tribes studied may be noted a progressive change in the concept of the form and dynamics of the power source. Starting with the unstructured, one-way-flowing pool of the Ojibwa and the Sioux, we moved to the Navaho's composite mosaic of localized but unrelated and unreliable personal-power entities (whom man coerced and propitiated) and to the Papago's unstructured, one-way-flowing power pool juxtaposed along side of a relatively simple, correlative power system, until we reached the highly developed, correlative power complex of the Hopi. Although the form and dynamics of the tribal power source are obviously closely related to the tribe's traditional social structure and life-way, they are apparently characterized by a high degree of stability, persisting despite white influences which bring about major changes in the tribe's ecology, economics, social organization, and religious expressions. Little has been done toward systematically analyzing Indian tribal symbol systems as wholes, but the work of Benjamin L. Whorf on the

Hopi leads to the inference that the traditional Hopi attitude orientation is deeply rooted in the Hopi symbol system, especially in the formal structure of the Hopi language.[44] This offers an intriguing clue regarding the stability in form and dynamics of basic attitudes in other tribes, especially when we note that in each tribe studied the native language persists along with at least part of the indigenous literature and other art forms.

4. While the form and dynamics of basic tribal attitudes appear to be highly stable even in the modern acculturation situation, according to our data, a change in the content of the power equation may be noted in the communities under great pressure, namely the acculturated Ojibwa, the Sioux, Shiprock, Topawa, and Oraibi. Here human power sources, such as the government or "everybody," appear to have replaced in part the traditional non-human ones, while mechanisms for dealing with human power entities, such as witches, ghosts, or bad medicine-men, are emphasized.

5. The foregoing findings and generalizations, I submit, suggest that in the tribes studied, basic orientations regarding the nature of the universe, man's relation to it, and to its non-human component, including animals, are major psycho-cultural structures, deep-rooted in the tribal past and persisting through millennia, despite far-reaching changes in the group's ecology, economy, sociology, and ritual expressions. Whatever their historic origin, the evidence leads to the assumption that once such basic attitude patterns become firmly entrenched in the tribal culture (probably in the symbol system) and in the communal personality structure, their inner morphology tends to endure despite changes in content and emphasis.

6. While popular hypotheses that religion is a projection of child-training patterns, or that it is a rationalization or an extension of the social system, may throw light on the integration of the individual personality or the "basic personality structure"[45] in the context of a particular social system at a particular moment in its history, such hypotheses should be re-examined to determine whether they do not oversimplify the problem and whether they are adequate to explain the persistance, through countless centuries and into the modern acculturation situation, of the type of basic attitude structures which have been discussed.

7. If such hypotheses prove inadequate, the fact should be explicitly recognized. Otherwise students of social and cultural dynamics may become sidetracked onto the problem of how culture is transmitted from generation to generation to the neglect of a central problem in social science; namely, the nature and process of culture creation, culture stability, and culture change through millennia and into the future. Only through the kind of concentration of this central problem as a whole, which leads to discovery and to the formu-

[44] Thompson, Mss.

[45] *See* Kardiner, 1945, pp. 107–123.

lation of adequate, heuristic hypotheses, I submit, will students of man and culture appreciably increase their ability to predict and to guide the course of psycho-cultural change on a society-wide and world-wide scale.

8. The findings indicate that a promising lead in this direction is offered by a comparative, cooperative approach to community and society-wide psycho-cultural research which employs several disciplines, supplements direct observation with a battery of relatively culture-free tests as well as the available literature, and strives to analyze the results integratively in broad geographic and historical perspective.

Finally, there is space to mention only a few of the many implications that these findings and generalization have for government administrators. For example, they narrow down and high-light the Indian administrator's alternatives in making policy and program decisions regarding soil conservation, range control, agricultural extension, forestry and education. Obviously, the Indian protective attitude toward nature, described above, is much more in keeping with that advocated on the basis of the findings of the modern biological and earth sciences than is the highly exploitative one common in the United States today. The administrator must decide whether to foster and build on the Indian world-view or (as is frequently done) to try to teach soil and range conservation, on one hand. and to inculcate exploitative American attitudes, on the other. But if he decides to foster Indian attitudes toward nature he should realize that a consistent program is necessary, including, among other items, careful selection and re-education of Indian Service personnel and their creative application to the problem. If he does not so decide, he should realize that these basic attitudes will persist in some form regardless, and he will be ignoring a golden opportunity to relate and guide basic indigenous orientations to urgent modern problems and to bridge the gap between the traditional Indian world-view and emergent modern world-views.

Furthermore, these findings should alter the enlightened administrator's expectations regarding the implementation of government programs, such as the administration of relief and stock reduction, in the various tribes. From the data it is clear that the dependency status of the Dakota Sioux today is due partly to a basic attitude disposition toward a dependency role, and not simply to economic and social factors and to paternalistic administration, as has often been assumed. From the Sioux case much may be learned which could be used to advantage by government officials in charge of the less acculturated Ojibwa.

Likewise the stock-reduction difficulties being experienced on the Navaho reservation are apparently related not solely to ineptitude or ignorance on the part of the Navaho Agency officials, as is frequently maintained, but also to the characteristic Navaho attitude toward power. The Navaho, it should be recalled, conceive power as being focused in countless disparate and unrelated

entities which must be coerced and propitiated, not for the good of society but primarily to re-establish harmony within the *individual* and between the individual and other *individuals* (whether human or non-human). This attitude reflects the typical Navaho mental approach which tends to concentrate on concrete, disparate details or entities rather than, for example, on organized wholes or on complex relationships between entities.[46] In the acculturation situation, as has been observed, this orientation engenders great fear of, and resistance, to the government, "everybody," witches, and ghosts; still the individual rather than the group remains the central focus of Navaho attention. Thus regardless of how much the Navaho officials understand Navaho "psychology," the Navaho stock-reduction program may be expected to be inherently more difficult to implement than that, for example, of the Hopi.

The Indian attitude toward sickness has been found, in all the tribes studied, to be related in the Indian mind not to breaking the rules of healthful living, as defined by white American culture, but to an infraction of indigenous morality, and often closely associated with animals. It should be noted that fear of sickness does not decrease appreciably with acculturation (including the presence of hospitals, white doctors and health programs) in the communities studied. On the contrary, in some more acculturated villages (e.g., Oraibi and Topawa), such fear increases, according to the test findings. White influences apparently tend to change the Indian's power equation, banning or otherwise bringing about a breakdown of his morality system and of his mechanisms for acquiring or controlling power, while at the same time he does not lose his traditional belief in immanent justice and of retribution in the form of sickness. If government officials, especially Indian Service physicians, nurses and teachers, would ponder these findings, there might develop in time a more realistic view of the Indian Service health problem, including what may reasonably be expected in the way of Indian reactions to white medicine and hygiene, which would lead to better relations with Indians and a higher in-Service morale.

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A QUESTION OF INTERPRETATION

By EDWARD W. STRONG

THE *Configurations of Culture Growth*[1] is a work of large design in the field of historical inquiry. Professor Kroeber, in his investigation of a wave-form of cultural achievements, arrays accomplishments in aesthetic and intellectual endeavors in search of correlations between culture patterns and clusterings of genius. There are hazards indigenous to this largeness of scope. Specialists in one or another domain will scrutinize it to judge the warrant therein for conclusions reached by the work in its total design. The critic-specialist runs also a risk, that of not seeing the forest in botanizing his own bush. The second half of this essay deals with only a single instance of the valuation of genius, the rating given to St. Augustine as a philosopher. The instance serves to illustrate, by the question of interpretation to which it gives rise, what does and what does not legitimately follow from the culture-historical problem formulated by Kroeber and his procedure in dealing with it.

Professor Kroeber, in his "Review and Conclusions" (Chapter XI), discusses three interpretations of culture growth, the third of which he states and accepts as follows:

> That cultures do not necessarily age or progress, but that they undergo variations in vigor, originality, and values produced . . . . This interpretation does not assume that either death or progress is inherent; it does assume that fluctuations of cultural vigor are normal. This assumption suffices for the type of analytical study made in the present volume. I have gone one step farther and added the working hypothesis that the reason for the fluctuation in any notable cultural achievement presupposes adherence to a certain set of patterns; that these patterns to be effective, must exclude other possibilities, and are therefore limited; that with successful development they accordingly become exhausted; and that there must be a breakdown or abandonment and reformulation of patterns before the culture can go on to new high achievement. (p. 822)

In Kroeber's book, as in every historical inquiry, what is presented constitutes an answer, or search for answer, to leading questions. I am first concerned to understand what the inquiry is committed to in the formulation of questions and modes of procedure. Indeed, if this is not understood, criticism is apt either to quibble over details that are not in themselves consequential or to miss the mark entirely by imputing intent that is foreign to the work.

I

Professor Kroeber is investigating general forms of human history. He formulates a culture-historical problem having to do with the behavior of culture patterns. His specific inquiry is focused upon periods of cultural flowering, those "relatively brief periods within nations or limited areas" in

[1] A. L. Kroeber, University of California Press, Berkeley and Los Angeles, 1944.

which "highest values" in a number of cultural endeavors occur close together. At least a descriptive interpretation is aimed at in arraying data, whether or not a causal explanation proves to be feasible.[2]

The questions relevant to highest values fall into three groups: (1) questions of time and place, (2) questions of valuation, and (3) the problem of high cultivation and culture patterns.

1. *Questions of times and places:* Time-periods have to do with the occurrence of florescences—the beginning, growth, culmination, decline and ending as defining the duration and crest of achievement. Places are geographic and ethnic, or national, areas in which the cultural behavior occurs.

The cycle of rise and fall within a relatively brief period is a continuity reconstruction of historical occurrence. Derived from evidence, it is an empirical description. The specification of place locates the society, culture, or civilization, and identifies culture patterns in their configurations in cultivational achievements or lack of them. Place-location is required in grouping producers and their products together within the same career or continuity.

2. *Questions of valuation* (rating): Where there are highest values, there also are the geniuses. The basis of valuation is stated by Kroeber as follows:

> My rating of genius and values, at any rate relatively within any one culture, is in the main the currently conventional one: I have followed the books, and their consensus is fairly close. (p. 23)

Departure from the books, as in his rating of St. Augustine, involves the legitimacy of his working hypothesis as tied to descriptive interpretation.

3. *The problem of high cultivation and culture patterns:* Culture as high cultivation (in distinction from culture as the time-place societal complex or totality of culture patterns—the "culture-growth whole") is synonymous with flourishing philosophy, science, sculpture, painting, drama, and literature. Such periods of florescence are "expressed by" or have their "indices" in genius. Assuming that the proportion of individuals of exceptional capacity tends to be the same within the total number of those who reach maturity in each generation, what will account, on the one hand, for the "clusterings of genius" and, on the other, for the lull periods, those periods in which "Full many a flower is born to blush unseen and waste its sweetness on the desert air"?

With this question we have come to the heart of Professor Kroeber's search. He would like to find out, if possible, what conditions will serve to account for socio-cultural performance. Within continuities of historical development, high

[2] The comparison of six major cultures is the scope of examination and interpretation. "The phenomena are cultural, and their first understanding must be in culture terms: how they behave culturally; how far they are historically alike or unlike; whether there is any type of event underlying the several cultural physiognomies. At present, any explanation can hardly be more than descriptive. The nearest I have ventured to an interpretation is in terms of the realization of culture patterns. But I recognize that as an explanation this is only perceptive or descriptive." (p. 19)

cultivation (culture as "achievements") may be differentiated from patterns (culture as a set of limited and limiting conditions of florescence) in order to assert that interrelations between achievements and patterns comprise configurations of culture growth. "The Growth of Nations" (Chapter X) arrays the constellations of florescence of several civilizations. Here civilization is the continuity: that which begins, grows, rises and falls (or displays pulses and lulls). We then have these further questions: What is required for an account of growth interrelations between crests of cultivational achievement *and* culture patterns? Would not Kroeber's inquiry, if concerned at all with causal explanations, need not only to establish the groupings and distributions of high performance but also the make-up and behavior of culture patterns differentiated as conditions of cultivational productivity? How much can be made out about interrelations if there is either no clearly differentiated and established character of "fundamental patterns," or if, with differentiation, there are numerous exceptions to a generalized rule of correlation?

In characterizing Kroeber's inquiry as "in search of correlations between culture patterns and clusterings of genius," have I correctly construed his working hypothesis? He refers to crests and configurations of cultivational achievements as "realizations" of culture patterns in their growth. I would therefore appear to be misreading his problem and procedure when I ask, "What is required for an account of growth interrelations between crests of cultivational achievement *and* culture patterns?"—the more so in view of his explicit avowal that his concern "with the inherent groupings of certain phenomena of history" is one "which largely begs the question of the basic mechanism involved" (p. 27). If the question is begged, it is important to see how the begging comes about and, when this is seen, to consider what is compared in "growth interrelations." Growth, states Professor Kroeber, has "definite descriptive meaning," e.g., as referring to sculpture in one nation, to a nation in both its cultivational and political development, to Occidental Culture or to the West as a whole.

The problem of interrelations centers upon what is specified as culture patterns. When Kroeber speaks of "a certain set of patterns" is this always synonymous with total culture in its growth configurations (with its realization or lack of realization, its pulses and lulls, it prelude and aftermath)? Or is there a differentiation within total culture of sets of patterns, one of which is that of cultivational achievements as demarcated from political-economic or some other set? To put the problem in another way: is configuration just interrelation between achievements in various domains (e.g., between philosophy and science, or sculpture and painting) in the growth of nations as compared with each other in studying a wave-form of development? Or is it, farther, between the constellations of cultivational productivity designated as realizations of one set of culture patterns *and* some other set, or sets, of patterns

within the growth of total cultures (civilizations) made up of these sets of the culture patterns? If the problem of configurations is formulated on the first alternative, it does beg the question of causal explanation since only a descriptive arrayal will be forthcoming unless the inquiry has recourse to agents or efficacies supplied by speculative supposition. Professor Kroeber rejects metaphysical prescription as improper to an empirical and scientific investigation. The question remains as to how far he explores the second alternative which affords a possibility of causal explanation.

"Adherence" of cultural achievement to a certain set of patterns and reference to these as "effective" suggests a differentiation within culture or higher civilization between cultivational productivity (realization of one set of patterns) and political-economic organization and development, another set of patterns.[3] Chapter X, "The Growth of Nations," is concerned throughout with the "correlation of national achievement and intellectual-aesthetic achievement," and hence with at least two sets of culture patterns and two behaviors as making up a higher civilization. These higher civilizations are compared with each other in their growth curves or temporal configurations of florescence; and, within each, the interrelations of the several fields of cultivational endeavor are examined. There are the "specific pattern achievements of value," and the "whole nexus of patterns which make up an idea-system or culture-growth whole; a civilization in everyday language" (p. 808). Moreover, Kroeber asserts that his culture-historical inquiry is in essential accord with two Spenglerian principles: "first, the existence of certain fundamental patterns characteristic of each major culture, and second, that these occur in limited growths" (p. 828). What is not clear is the specification or designation of "fundamental patterns." A grouping of phenomena which establishes growth configurations is not here in question as a descriptive interpretation, but *fundamental* patterns suggest some subscription to a basic mechanism. Do such patterns refer to political-economic (national) organization and growth, or do they refer to some form or physiognomy which is expressed in aesthetic-intellectual and national realizations but is identical with neither?[4]

I can find no empirical candidate for "fundamental patterns" in Kroeber's book other than "nation." There may, he writes, "be national florescences

[3] "It is clear that aesthetic and intellectual endeavors resulting in higher values preponderantly realize themselves in temporary bursts, or growths, in all the higher civilizations examined. The same sort of bursts or growths tend to characterize nationalistic development, as expressed in successful political organization and expansion. Whether the phenomenon also holds for wealth and population, is a separate question, which I have not gone into because the data are of a different order and seem much more difficult to acquire over continuous long ranges of history." (pp. 838–839)

[4] "Fundamental patterns" could not be a composite of two sets of patterns, the aesthetic-intellectual and the political-economic, without making "fundamental" synonymous with the "whole nexus of patterns"—a logical absurdity of making a total culture fundamental to itself.

without accompanying cultural ones, or vice versa," but such happenings are rare. "It is evident that ethnic or national energy and cultural energy are related but are not the same thing" (p. 844). The activities and endeavors, then, of two developments, the one aesthetic-intellectual and the other political-economic, are manifestations of two energies which are usually but not always related.[5] "By nationalistic development I mean coherent organization, especially on the political side, although economic success may also be involved; and, normally, external military success as expressed by victory or conquest." Yet there are instances of non-correlation between the two developments which argue against hypothesizing the nation as an indispensable condition (fundamental pattern) of cultivational productivity. "That national organization and expansion can occur without notable achievement in the fields of art and thought is evident from numerous examples that have been touched upon here and there in the foregoing pages." (p. 791)

No other candidate takes the place of "nationalistic development" except "major culture" or "civilization," for example: "The growing civilization [of the Western nations] was vigorous however, and such a one-sided reworking did not satisfy it. It therefore turned away from systematization to a phase of acquisitiveness of cultural content; from which before long a growth of science emerged, which resolutely began where the Greeks left off" (p. 784). A "vigor" that does not find "satisfaction" and therefore turns away for a "resolute" endeavor is a metaphorical or dramatic representation of civilization. It is innocent of thesis only so long as it remains descriptive and not prescriptive; that is, so long as it does not play the role that an "organic" culture plays in Spengler's philosophy of history where morphology of cultures lends support to a judgment of the inevitable destiny of the West.

To sum up: an interrelation study empirically conducted and looking for causal explanation would require (1) a differentiation within culture or civilization of patterns other than those of cultivational achievements, (2) the specification of the make-up and behavior of these patterns, and (3) correlations of these with periods of cultivational productivity. So far as Kroeber refers growth configurations of cultivational achievement to energies of civilizations, his comparisons have to do with the time-durational, place-located careers of entire societies, a narrational account. The procedure is not formulated, except for political-economic organization which is not a fundamental pattern, to account causally for what influences, promotes, or deters clusterings of genius. Only a descriptive array is empirically warranted. Configurations of growth are performances usually attended by national development in their distributions and characteristics.

[5] National energy does not exclude ethnic energy as an hypothesis; but in the arrayal of contributions by their nationality, and in the attempt to correlate these with factors or conditions of national growth in search of clues to their distribution and clustering, Kroeber has selected the former as the judgmental pattern.

In view of the foregoing, what is the role of Professor Kroeber's working hypothesis, that of the adherence of cultivational productivity to a set of culture patterns? Such adherence, unless a correlation with political-economic patterns is specifiable, is achievement, either accompanied or unaccompanied by national achievement, in the growth of a civilization. Is growth in every instance empirically concluded from a continuity reconstruction establishing a wave-form of historical process; or does hypothesis sometimes take on the role of thesis which determines what is, or what is not, an achievement of highest value? Professor Kroeber does not intend anything of the latter kind and would not consciously abandon empirical procedure to argue doctrinally. Metaphors, however, have seduced even the wary.[6] The rating given to St. Augustine is an instance in point.

II

Dr. Kroeber divides the philosophy of Occidental antiquity into two main periods, the first of Greek philosophy, and the second that of Later Mediterranean Philosophy. "In Greek philosophy, two grand divisions must be distinguished: a productive period, little more than three centuries long; and a period of essentially nonproductive contributions, which is of indefinite duration" (p. 32). The first period begins with the philosophers of Ionian Miletus and tails off with the Stoic, Epicurean, and Skeptic schools. Its culmination is the period of Democritus, Plato, and Aristotle, the greatest geniuses. The epigones are the followers of the Middle and New Stoa, Lucretius, the Skeptics and Eclectics.

The Later Mediterranean Philosophy has its beginning in the first century B.C. in Neo-Pythagoreanism and, with the Christian Apologists in the year 200, is divided thenceforth for the next three hundred years into non-Christian and Christian groupings. On the pagan side there is judged to have been one real growth, that of Neo-Platonism with its culmination in Plotinus. Of the entire period and with regard to Christian philosophy and St. Augustine, the following is asserted:

The five or six hundred years in question here obviously do not contain a coherent growth like that of earlier Greek philosophy proper, in which even the divergences stem from a central line of development. They include a series of diverse and often ve-

[6] Kroeber is wary. "Certain metaphors, I am certain, will provoke irritation and criticism: growth, patterns, saturation, realization, pulse, dissolution, and the like. If I could have found more precisely denotive terms, I should certainly have used them, and I shall welcome any substitutions that are either more definable, or more aptly connotive" (p. 26). Metaphors do not seduce when used descriptively provided they do not outrun their warrant in subject-matter. By warrant, I mean what can, in each instance of use, be set forth as the occurrences of beginning (birth), cumulative development (growth), ending (death), etc. I consider the usage of Professor Kroeber to be vivid and appropriate to the subject matter of human history, i.e., both evocative and descriptive; but the danger of being ravished by it unwittingly always lurks in using metaphorical language.

hemently conflicting currents. . . . The whole Christian half, at least, of these endeavors would probably count for very little as philosophy if Christianity as an institution had not acquired so great and enduring an importance. There is therefore, naturally, no clear culmination on the Christian side. St. Augustine is no doubt the best known and most vivid figure. But if we take away St. Augustine the theologian and the personality, how much of a philosopher would we have left? (p. 40)

The immediate question is one of valuation. What ranking is given to St. Augustine in standard histories of philosophy?[7]

Windleband: "Augustine was the true teacher of the Middle Ages." "His doctrine is the ***philosophy of the Christian Church.***" Speaking of the system of Christian thought, Windleband states that it was worked out "by a mind of the first order—Augustine."

Uberweg: "In Augustine the development of ecclesiastic doctrine in the Patristic period reaches it culminating point."

Erdmann: "Augustine is the greatest and last of the Church Fathers. In him are found at the same time the beginnings of an activity which goes beyond that of the Church Fathers and forms the vocation of the next period." The next period referred to is that of Scholasticism.

Weber: It is the writings of Augustine which "form the connecting link between Greek thought and Scholastic speculation."

This rating of standard histories is confirmed emphatically by Richard McKeon, a leading medieval scholar: "The philosophy of Augustine, whatever its origins, . . . was to determine the problems, and in part even the conclusions, of a thousand years of philosophers. In his work there emerges for the first time, . . . a system of christian philosophy."[8]

On Kroeber's announced basis of ranking achievement, it is difficult to see how he can disqualify the Bishop of Hippo. He is, of course, not bound in every instance to defer to the historians of philosophy in their judgments of rank or importance; but where exception is taken, the evidence and reasoning need to be presented and the burden of proof is upon the dissenter. Windleband appears to be thoroughly justified in characterizing Augustine as a mind of the first order with respect to his contributions in philosophy, e.g., his theory of history, his analysis of memory, his metaphysics of a created world.

Professor Kroeber presents two reasons or arguments for disqualifying St. Augustine as deserving high ranking as a philosopher. The first is his judgment

[7] Augustine's thought can be characterized as "Christian Philosophy." It is "Christian" in religious content and "Philosophy" in its reasoning devoted to the questions and problems embodied in the content. A reasoned theology is philosophical where a dogmatic theology is not. The standard histories of philosophy assign a high rating to Augustine as a philosopher, not by subtraction of religious content but in his perspicacious deliberations concerning religious subjects. Whether Augustine is or is not a genius on other than his philosophical attainments is not the question at issue.

[8] *Selections from Medieval Philosophers*, Vol. I, *Augustine.*

that the Christian half of Later Mediterranean Philosophy "would probably count for very little as philosophy if Christianity as an institution had not acquired so great and enduring an importance." Leaving to one side the fact that historians of philosophy are concerned with Augustine as philosopher, the argument itself excludes the point at issue. It is true enough that had there not been a great and enduring importance of Christianity, no retrospective credit would accrue to St. Augustine as a Church father. But to imply that in this is all of Augustine's credit is to deprive him of his *contribution* in first establishing the system of Christian philosophy determining the problems of "a thousand years of philosophers." The argument neglects the formative and determining effect of the man's production as itself contributing to the later historical situation. It is a curious argument that asserts the great and enduring importance of Christianity as reason for discounting the value of a major contributor.

The second reason begs the basic question of empirical inquiry into wave-form as connected with the appearance of genius. The initial question is whether Augustine is or is not a genius or near genius. If he is, the question then to be investigated is whether there is a continuity leading up to his work as crest or culmination. If there is not, he is then one of the isolated geniuses similar to Erigena in the ninth century, an exception noted by Kroeber. Erigena was not demoted because there was not a coherent, cumulative tradition although he, like Augustine, was indebted to predecessors. But to decide that there is not a coherent growth and from this to question how much of a philosopher we have left in Augustine is to transform hypothesis of wave-form into thesis which disqualifies Augustine. Without a continuity of development it will not be proper to speak of Augustine's work as a culmination, but there is no warrant in this for the judgment that the work could not therefore count for much as philosophy.

Dr. Kroeber's results, on the whole, justify his assertion that "cultural florescences, viewed as such, reveal themselves as tending strongly to come in pattern waves" (p. 15). From the empirical procedure followed by him, the wavelike character of culture growth is an hypothesis warranted only so far as it is borne out by reconstructed continuities which come to a climax and then fall away. Yet a genius is a flowering even though he appears as a single bloom and not in a bouquet. For descriptive interpretation, the energy or vigor of a culture in its cultivational aspects is known by what men attempt and what they produce. As Kroeber states, persons are the indices in their attainment. The patterns established by his study support his assertion that one "conceivable" way of defining higher values is to designate them as "those qualities of human productions which normally appear in historical configurations thus limited and shaped." (p. 762)

The *Configurations of Culture Growth* establishes not only the legitimacy of

the culture-historical approach but also a phenomenon of wave-form and of clusters of cultivational achievement. Yet it does not follow that what does not fit the phenomenon can be ruled out. Kroeber recognizes this and allows for it when he speaks of what *normally* appears in historical configurations. The danger lies in asserting more than the descriptive "normal." For the culture-historical approach, a genius is a "symptom" and a wave-form is empirically reconstructed from symptoms. "If we are interested primarily in culture and how it behaves, we can disregard personalities except as inevitable mechanisms or measures of cultural expression" (p. 10). "Normal" is not "inevitable." Appearance of genius as "a function of sociocultural events" is not legitimately converted into the proposition, if no characteristic configuration, then no high achievement. The illustration of St. Augustine indicates a submergence of an instance that does not fit into a configuration of growth and realization, a wave-form; but a wave-form as an empirical hypothesis established in descriptive arrays is arguable only so far as it holds good. As for the working hypothesis "that any notable cultural achievement presupposes adherence to a certain set of patterns," there is no conclusive confirmation of the presupposition as having predictive value based on discovered laws of the growth and productivity of cultures. In default of causal explanation, geniuses in their achievements may legitimately be treated as "indices" but hardly as "inevitable mechanisms or measures" of cultural expression. The latter outruns descriptive interpretation, when presupposition becomes doctrinal, and converts hypothesis into thesis.

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CULTURE, NORMALITY, AND PERSONALITY CONFLICT

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A GROWING group of anthropologists has in recent years been engaged in constructing cultural configurations as psychic, rather than formal-structural, entities. That neither methodological exactitude nor validated results have been secured is hardly to be expected since the other behavioral fields from which various formulations have been borrowed possess no common frame of reference. And further, this new approach has only recently appeared: Betty J Meggers[1] elects 1932 as the year that the psychological tide set in. And while the older anthropology required years of training to develop the requisite *technical* proficiency, the haste with which mutually unconnected, and even contradictory borrowings from other fields were thrown together in the new approach tempted many to sweeping generalizations, such as H. G. Van Loon's statement that the psyche of "primitive races" resembles very much the psyche of children![2]

Part of the difficulty stems from an uneven application of pertinent psychological and psychiatric materials: Clyde Kluckhohn[3] claims that anthropologists are too steeped in the writings of psychoanalysts, to the exclusion of nonanalytic psychiatrists. But far more important is the fact that much of this new literature has been written with an implicit or explicit social-reform orientation. Many of the new anthropologists, reversing the role of the nineteenth-century missionary, who descended upon a primitive people to show them the true light emanating from *our* culture, insist that all mores are relative to the society in which they operate, i.e., we must not criticize peoples with cultures differing from ours in fundamental assumptions, yet we should use those differences in applying reforms to our own culture.[4]

It is against this background of inchoate theoretical formulation, controversy, and unvalidated generalization that attempts to establish criteria of "normality" have appeared in the literature. This concept has long bedevilled investigators in other fields as well. Typically, "normality" has been used on two different levels of meaning, oftentimes simultaneously, and unwittingly, by the same writer: as a statistical average of attitude or behavior; and as "an ideal fictional state never completely reached, to which only approximations are possible."[5] On one score, however, the anthropologists with a psy-

[1] Meggers, 1946, p. 183. Dr. Meggers takes a gloomy view of the new trend, claiming that the three variables, culture, society, and man, taken together, are unmanageable. Anthropology can retain its status as a special field of investigation only by remaining within its own province, culture.

[2] Van Loon, 1927, p. 437.

[3] Kluckhohn, 1944, p. 589.

[4] Cf. Williams, 1947.

[5] Hacker, 1945, p. 48.

chological bent are unanimous: that standards of normality are relevant only *within* a given cultural system. And taking the statistical horn of the dilemma, the claim is made that a norm, for the given society, can be established. The following quotation is quite typical of opinion today:

> If . . . we acquaint ourselves with the modal behavior of individuals in a series of totally different cultures and develop norms based on such a standard of reference, we discover that there always are individuals deviant from the norm in every society, and some of these exhibit definite pathological symptoms.[6]

This point of view has become conventionally acceptable as stating the relationship between culture and personality conflict, and persists when contrary empirical evidence is presented. Thus Margaret Mead states that neurotics may be either physiologically inadequate *or* culture deviants,[7] after demonstrating that the statistically normal Tchambuli male is neurotic. And Abram Kardiner states that the Alorese individual becomes "disorganized"[8] who has been cut off from the approved social goals, after demonstrating that this characterizes the entire range of Alorese society.

In a word, personality conflict is represented as arising from individual deviation from the standards of conduct operating within the given culture. It is the purpose of this paper to offer a different criterion, that will have no reference to cultural relativity, to the fact that standards of normality differ and are even often antithetical, from society to society.

The difficulties in using the field-results of other investigators to establish a common criterion for personality conflict are enormous. Nevertheless, while the materials used below do represent a diversity of approaches, and while the key formulation of this paper is nowhere explicitly stated in any one of them, it is hoped that a successful demonstration is made of that formulation's being implicit in all of them.

It is the thesis of this paper that the cultural causes of personality conflict can be explained in terms of the extent to which any given culture imposes roles, goals, and self-conceptions which are internally inconsistent, upon various social categories of persons—most commonly, age and sex. In most cases the inconsistency is found in a chronological context: at different stages in the life-history mutually contradictory roles to be enacted, and goals to be striven for, receive cultural sanction. Less frequently, roles and goals which are supposed to be fulfilled *at the same time* are mutually contradictory. Examples of how these two types of inconsistencies operate within different cultural contexts are cited below, along with an evaluation of their effects upon personality.

With this formulation, the problem of cultural relativism in "normality"

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[6] Hallowell, 1936, p. 1293.
[7] Mead, 1935, p. 291.
[8] Kardiner, 1945a, p. 453.

is by-passed, and the two troublesome aspects of normality, statistical deviation on the one hand, and ideal-normative fulfillment on the other, are simply ignored. Much of the personality conflict described below is neither deviation nor failure to strive toward current ideals of behavior, appropriate for sex and age. In other words, it is hoped that here may prove to be a formulation that will reconcile Dr. Megger's rigid compartmentalization of culture, society, and man. Whether this remains within the province of anthropology the present writer is not competent to judge, but the formulation might afford a common focus of attention to investigators in tangential social science fields who desire to use anthropological materials.

The thesis under consideration can be demonstrated most strikingly in those native cultures with economic, political, and philosophical bases radically different from those of the modern west, and yet which have been subjected to considerable "acculturation." Nevertheless, in some relatively isolated cultures, conflicting demands are made on various categories of persons, and personality conflict is endemic. Introduced below are some summary-descriptions of a few representative cultures, some of which have become dominated by western influences, others relatively little. It should be pointed out that rarely do the investigators cited use the terms "role," "goal," and "self-conception." Yet a checking of any source cited will demonstrate that no untoward violence has been practiced; no new terminology has been manufactured; instead, an implicitly common focus of attention has been delineated.

The Ojibwa Indians of Southeastern Ontario.[9] While very young, the Ojibwa boy is surrounded by near and dear siblings and parents. But this psychic protection is short lived, for he soon learns that only the role of successful hunter and warrior, a highly individualized, solitary pattern among the Ojibwa, will bring the respect and adulation of others, for, unlike the neighboring Dakota Sioux, there is available no flight for the timorous deviant to the camp of the *berdache*, where the role of peaceful craftsman receives a secondary, but real, valuation. The "Ojibwa ethos" is saturated with anxiety, which has a realistic base in recurrent periods of starvation, yet similar harsh conditions among the Eskimos to the north strengthen community bonds for available supplies of food are shared.

But the Ojibwa have no possibility of gratifying a self-conception through such sacrifice, for only the individualized hunter who "exerts power over people for his private ends" is highly regarded. Yet *goal-attainment is psychologically penalized*, for he becomes more vulnerable, instead of secure. The boy is trained not to rely upon the "weak and competing humans about him," but to seek the aid of supernatural beings. Attainment of this power forces the respect of others, but they fear him, leave him alone, and other hunters, jealous of his power, direct *their* power against him.

[9] Sources: Landes, 1938a and 1938b.

The constant pressure to attain a goal which is self-defeating leads to "severe anxiety neuroses" on a large scale, manifesting themselves in "melancholia, violence, and obsessive cannibalism"—all subsumed under the Ojibwa term *windigo*. We are dealing here with the most logically traumatic goal-frustration experience imaginable. The position of the Ojibwa adult male is analogous to the laboratory situation described by A. H. Maslow.[10] A rat, deprived of food for twenty-four hours, will not inevitably break down, for we must distinguish between a situation in which the animal must give up something, and one in which it must give up nothing: it is the necessity of a self-defeating *choice* which is the clue to extreme goal-conflict. When the rat is both hungry and thirsty, and is made to choose between food and water, he experiences more threat than if he were forced to endure both deprivations. Similarly, the adult Ojibwa male is threatened by failure to attain his two supreme goals, safety and prestige, by the one avenue of means available to him.

The Ojibwa recognize two types of male deviants: those who fulfill the prestige and power drives in the culture beyond the statistical norm, and those who withdraw from all efforts to compete with others. Significantly, it is in the former that personality disintegration is most frequent, while the latter preserve a "coolness" in ignoring the "usual standards." In other words, *those who deviate most from the statistical and ideal norm suffer less than those who fulfill the ideal to excess.* The conclusion is inescapable that the source of male personality conflict is *in* the cultural imperatives, and not in overt behavioral deviation from them.[11]

From a mental hygiene point of view, the Ojibwa female's culturally defined roles and goals are far superior to the male's. She works in company with others. Her appropriate sex role is not rigidly defined: under duress, she can take to the warpath if a relative's blood "is crying for revenge"; she can hunt if she is orphaned, widowed, or divorced, but this is a practical matter with her, free from power drives and with no stress on controlling the supernatural. Women do not "go windigo," i.e., developed neurosis or psychosis. Except that she must do all of the house chores, her training is more haphazard, allowing for a greater range of interest expression. Those women who follow masculine pursuits are honored rather than villified. The only deviant type of behavior not tolerated for women is non-marriage.

The Hopi of Northeastern Arizona.[12] Although Eggan is more impressed by

[10] Maslow, 1943.

[11] In comparison with the examples of other cultures given below, the peculiarity here is the absence of the time-element. The source of personality-conflict for the Ojibwa male is not one of inconsistent roles and goals inculcated at different periods in the life history, but the impossibility of attaining, in the one role of hunter and warrior, for which his entire boyhood was training and his manhood fulfillment, the two goals of safety and prestige.

[12] Sources: Eggan, 1943; and Thompson and Joseph, 1944.

the range of personality difficulties among the Hopi than are Thompson and Joseph, it is abundantly evident that such conflict is not nearly so endemic here as among the Ojibwa. What culturally induced stress and strain does exist stems from two sources: that which is indigenous to the Hopi culture, and that which results from training in the government boarding school.

Hopi experience cannot be cited as evidence for the widely accepted psychoanalytical theory of personality conflict as resulting from impulse deprivation in infancy and childhood. Maternal care is indulgent, weaning is late, there is no early and severe anal training, nor oral frustration nor masturbation taboos. The anxiety Eggan finds among them during childhood is said to result from the severely enforced curtailment of aggression *after* "the first few years of pampered childhood," cooperative behavior being of the essence in later childhood; and anxiety also results from impressing on the child supernatural horrors, in the form of ghosts and evil spirits.[13] And during the first initiation of the boy into the Kachina society, he learns that the Kachinas (ancestral gods) are not real gods, but human representations. So the double burden of cessation of indulgence and disenchantment, according to Eggan, causes much psychic distress.[14]

As for acculturation, Eggan notes that the white man's restrictions have fostered antagonism, dependence, have lessened self confidence, security, and pride. In the boarding school "their personal dignity was systematically offended"—clothes burned, hair cut without permission, and names summarily changed, a matter for transition rituals among the Hopi. There is an important sex differentiation, however, for, as is noted below, the boarding school *continues* female life experience, while it disrupts that of the male, fostering an independence that will be disrupted when he returns to the matriarchal system of the tribe.

Thompson and Joseph separate sex conditioning more radically. Descent is unilateral, through the female line; girls are more prized than boys, and have a more stable position and greater security through the rest of their lives. While the female remains continuously with a closely knit, powerful group of female relatives, the male, at four or five, must break away for the less stable and more hazardous world outside the household. With the male's adulthood initiation, he must *suddenly* become a man, assume adult responsibilities and eschew all quarreling, demands that are exacted more slowly on the female.

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[13] Abram Kardiner's contention, that religious systems are "replicas of the experience of the child with parental disciplines . . ." is not borne out in Hopi. *See* Kardiner, 1945b, p. 112.

[14] Kennard, 1938, p. 2, states that the Hopi remain "comfortably vague" regarding the supernatural aspects of Kachinas, exhibiting interest only in the concrete details of the rituals. This may be sufficient to re-open the question as to the extent of "disenchantment" experienced by the Hopi child.

For both sexes there is much limitation and frustration of impulse expression *that is allowed free play in earliest childhood.* Yet the boy experiences more personality conflict than does the girl. The girl is consistently trained from earliest childhood for the ultimate role of clan mother. While she has less freedom outside the household than the boy, she is not concerned about it, and she is not subjected to so many contrary experiences:

> The responsibilities and tasks which, for the Hopi boy, are only limiting duties and hard work without much fun, are those which he has to perform at home to help his mother—hauling water and chopping wood. . . . At the same time he observes, and feels, at home, the more or less firmly established authoritative position of his mother, and his father's peripheral significance. He also hears that his sister and not he himself will become the real head of the clan. Thus, while away from home he feels himself as an important and useful assistant to his father and the whole family, while back at his mother's house he has to become the obedient little boy again. And in fact this would not be so unpleasant, considering the warm security of food and bed and the affection given him by his mother, other relatives and friends, if the different position of the males and the females were not noticeable in the home atmosphere. This may explain why we find in boys the vague anxiety of bewilderment which the girls show less frequently.[15]

And in the boarding school, the boy must sacrifice the adult status accorded him in the initiation ceremonies, sacrifice the goal of independent action, return once more to the role of small, obedient child. Under these circumstances, and in terms of the key formula of this paper, why are personality conflicts *less* serious among the Hopi than among the Ojibwa and the Alorese (*see* below)?

The two polar points of orientation among the Hopi are the household and the ceremonial system. While the former is dominated by the women, the latter is the sole province of the men. While everyone is initiated, and learns the secrets of the masks, only the males take an active part in the Kachina rituals. From earliest childhood the boys are enabled to *project* into the future a secure and culturally highly prized role. And while contradictory demands are made of the boy in childhood, these arise out of a clash *between* situations defined within and outside the household, not as defined *within* the household. Mother and siblings remain a warm, nurturing unit. The close identification with relatives, which makes possible a deep internalization of impulse repression, is not subjected to a radical change in affectional attitudes, as occurs among the Alorese.

Finally, there is the peculiar function of the supernatural and of witchcraft in Hopi society. While Hopi children have many "unreal" fears, these are transferred into the supernatural realm, "a fact which implicitly will accentuate (on the other side) the security represented by the mother's lap, the

[15] Thompson and Joseph, 1944, p. 114.

familiar house, the laws and rules, and finally the group itself."[16] The intensive cooperation demanded by Hopi culture has led them to decry exceptional ability and to emphasize moderation in all things. The supernatural fears inculcated in them to enforce this pattern have given rise to widespread fear of, and accusations of, witchcraft.[17] These activities serve to funnel off aggressions that would receive no other sanctioned outlet, serving as a *compensation* for the repression of culturally non-acceptable goal-seeking.[18]

The Alorese of the Netherlands East Indies.[19] The Alorese infant's situation is not too difficult: walking and talking are not forced, bowel training is disregarded during the pre-walking period, and a certain amount of fondling is customary. Early childhood, on the other hand, is extremely traumatic; this is not so much the result of institutionalized conditioning as of an "accident,"[20] resulting from the mother's having to work in the fields all day. There is no system of rewards for good behavior, however, and discipline is inconsistent, the child being indulged one minute, struck the next, and, since adults feel no compunction to keep promises made to children, there is little emotional security. But because of the chaotic punishment and reward system, *little internalized identification with adult relatives takes place*, so that while social standards are imposed, they are not deeply rooted, and there is little turning of aggression upon the self.

For the young child, temper tantrums comprise the inefficient and diffused means for achieving his goals. At the same time, the child is subjected to a great deal of teasing and ridicule, deliberately provoked to aggressive response in order to provide adults with amusement. This is one of the poorest forms of training imaginable for adult life in Alor, for the interlocking affinal kinship system and the individual-initiated system of finance which ramifies out to involve the whole community require an extreme forebearance in the overt expression of aggression.

Boys especially must forego aggressiveness in order to avoid fines that the group must pay. Since parental imagos are not deeply internalized, he does escape the neurotic symptom of guilt, but the systematic teasing, and being given food of the less choice kind, does lead to the feeling of being undervalued, so that anxiety and inferiority—in a word, damaged self conceptions—are

[16] Thompson and Joseph, 1944, p. 105.

[17] Titiev, 1942, p. 557.

[18] *See* Beaglehole, 33, p. 121. Beaglehole states that each society tends to "emphasize one segment of the potential raw stuff of human behavior," and represses others. But compensations must be forthcoming, either in occasional ceremonial allowance of the forbidden behavior, or "for the satisfaction of emotional-impulsive drives that receive no overt expression in the generalized culture pattern." There would be a danger, however, in assuming that the same amount and range of compensations could be found in all societies.

[19] Sources: Du Bois, 1944; Kardiner, 1945a.

[20] Kardiner, 1945a, p. 170.

commonplace. Later, he will seek a mother-provider in a wife, a goal severely frustrated in childhood, but the mother-provider is a role that girls are ill-trained to fulfill.

Women are the basic economic producers in Alor, but they have less official status than men and "the feminine role in this society is synonymous with being exploited and worked to exhaustion."[21] Yet the women directly control the male striving for food and sex; and for the men, the acquisition of wealth directly interferes with the goal of sex-gratification because marriage, and the the birth of each child, requires that he surrender more "gifts" to *her* male relatives. The general psychological picture which emerges is one of "frustrations, confusions, and surrendered goals."

In certain ways, the Alor adult male's position is similar to that of the Ojibwa's: the attainment of the supreme goal in Alor society is self-defeating. In Alor, the powerful male is one who accumulates a large stock of gongs and mokos through financial manipulation. Very few succeed; the rest become satellites, and revert to the culturally denigrated role of protected child. But those who succeed are little better off, for their affinal responsibilities increase, other powerful men organize to impoverish them, they must constantly be on guard against the pilfering of children, and the women threaten them at too many actual points of power. At no period in his life may the Alor male feel secure, at no time may he have a high regard for himself.

The Fijians of Kambara.[22] The Lauans of Kambara present a total picture of but little personality conflict, owing to the fact that severe goal and role clashes are not indigenously fostered, and that the British colonial government has wisely attempted to integrate Western innovations with the going native culture.

Infant care is "good," i.e., children are highly prized, are nursed for a year and gradually weaned, and are "petted and encouraged" by female relatives. Walking and bowel-control are neither suddenly forced nor traumatic. Yet the boy's life, from age seven to his initiation at eight to thirteen, is difficult. Ignored, teased, overworked, and called by an obscene name, "*pilo*," he "suffers from feelings of inferiority, becomes self-conscious, awkward, silent, and retiring."[23]

As was pointed out above, roles, goals, and self-conceptions operate on two levels—anticipation (projected) and realization. Unlike the Alorese youth, the Lauan boy's ego is supported by the knowledge that self-satisfying roles and goals are soon to be realized, definitely so, upon his initiation into manhood. Since personality conflict is not a matter of a single traumatic episode,

[21] Du Bois, 1944, p. 115.
[22] Thompson, 1940.
[23] *Ibid.*, p. 44.

or series of episodes, but a life-history trend,[24] the arresting of that trend will diminish the effects of earlier experiences:

> A youth's life changes radically after his initiation. He is accepted immediately as an adult male in the community and as such has all the privileges of a full grown man. He now begins to prepare food for the earth oven, sail on trading expeditions, learn a craft if he is a member of a hereditary carpenter clan, and participate in ceremonies and adult games. Women and girls defer to him and he begins to have secret love affairs with those who are not tabu to him. From a self-conscious inverted *pilo* he rapidly grows into a loud swaggering and aggressive youth, arrogant and condescending to women, and with great interest in the figure he cuts in the village.[25]

Great Britain has imposed an *indirect* rule; the old elaborate rank structure has not been radically modified, and native chiefs have been given colonial political posts. It is a British policy to retain land title in the clans, so there is no unemployment, and a man who wanders may always return and work his ancestral holdings. Although the elimination of warfare and the inauguration of a paternalistic policy have "weakened" the Lauans, and the traditional ceremonial exchanges are being buffeted by new economic policies, the "fundamental cultural drives persist," for the natives have retained economic independence, the basic social system of ranked clans has been made the basis of the new political order, and contact with the old sacred places has been maintained. Interestingly enough, Christianity has been blended with native beliefs, and the native chiefs have been used as missionaries! The general picture presented is one that is not too unfavorable to personality development: the indigenous culture does not force impossible individual alternatives, as is the case in Alor and Ojibwa; and western influence has not driven a wedge between the generations.

Java and Omaha. Far different "acculturation processes" are presented by B. Schrieke and Margaret Mead. In Java,[26] the "old society" had the primary aim of leaving things as previous generations had found them; it was a world without competition, individualism, or desire for improvement. Today, under the impact of western *economic* domination, the individual, not genealogy, assumes importance—money, not land; and the sale of land, formerly forbidden, is now common. To succeed, the modern native *must* break away from the unity of traditional society. And, unlike the Fijian experience, old and new have not been brought into harmony. Feelings of distress, exploitation, and impotence are common, and a "social inferiority complex" results which is "actuated from latency and charged with energy by every feeling of belittlement of the ego in our own eyes."[27]

[24] Green, 1946b, p. 533.
[25] Thompson, 1940, p. 46.
[26] Schrieke, 1929.
[27] *Ibid.*, p. 243.

The "Antler,"[28] American Indian tribe is depicted as a morass of inertia, loss of pride, conflict of generations, intra-group and personality conflict. Within a short period, a culture oriented about the male activities of war and hunting, about free land and free giving, ancestral rank, maternal descent, polygamy, and native religion, was by fiat abolished by the American government. Supposed to become farmers, the males ceased all productive activity; becoming in fact ward-landowners, through inheritance and sale of land, they were wealthy one year, poverty-stricken parasites on their relatives the next.

The women, not the men, are now the core of the battered Antler culture. Their culturally traditional roles and goals were not smashed with one blow. From generation to generation, they were able to continue their traditional gardening, house tending, and child raising. Both sexes have one paramount compensation—blame of the white man for all their own defections. The men thus explain away their vegetative existence, the women console themselves for the well-nigh universal deviation from the cultural ideal of female chastity.

In spite of all the qualifications noted in the first part of this paper, enough material has been presented to warrant a few tentative conclusions. In the first place, the role, goal, and self-conception formulation appears to be a useful tool of analysis that can be applied regardless of the range of cultural diversity. Any two cultures can be compared in terms of (1) the extent to which culturally defined roles, goals, and self-conceptions, appropriate for social categories such as age and sex, are inherently inconsistent at any given moment in time; and (2) the extent to which these cultural definitions regarded at different points in time, for the same social categories, are inconsistent. It is important to emphasize that early life conditioning is not the *source* of personality conflict; but the conflict *between* earlier and later self-incorporated cultural elements is predictive of personality conflict at this level of abstraction. Even Abram Kardiner, who stresses the importance of early family conditioning perhaps more than any other investigator, admits that earlier personal-conflict trends must be reinforced by later experience in this connection.[29]

Second, roles and goals must be distinguished as *projection* and *realization*. The projection is the personal seeking of assurance that a desirable future state will ensue. Where this is true, more *present* frustration, role and goal conflict, invidious distinctions, are personally assimilable. This was noted in Hopi and Fiji. This is a form of compensation for one's present condition. Different cultures develop varying kinds and degrees of compensations for conflicting roles and goals *presently* played as well, and in such cases offset much personality conflict that would logically be expected to ensue.

[28] Mead, 1932.

[29] Du Bois, 1944, p. 13.

Third, deviation, in and of itself, is not linked in any one-to-one relationship with personality conflict. It has been demonstrated that the statistically- and ideal-normal male in Ojibwa and Alor is ridden with conflict. Interestingly enough, the claim was made that the statistically- and ideal-deviant male was better "adjusted" among the Ojibwa. This is not to say that the temperamental or overt deviant does not develop personality conflicts, but merely that the assumption of deviation where conflict is found, and vice versa, is likely to confuse the issue.

Fourth, the degree of identification fostered with the persons directly mediating the culture during the period of maximum socialization of the child is important. The tentative hypothesis is offered that the lesser identification engendered, the more inconsistency and the more failure to attain desired roles and goals can be assimilated, precisely because failure elicits less guilt. The Alorese, considering the stresses they "normally" experience, would unquestionably be the most conflict-ridden society on record unless spared a high degree of identification with the mother.[30] James Clark Moloney[31] has shown the Okinawan child being firmly emancipated from his mother's influence at the age of four, in order to develop independent adult roles and goals early in life, able to withstand shelling, dirt, hunger, and infectious diseases without becoming neurotic. He further observes that this is not true of *other* Orientals who have accepted Christian "identification," which

> . . . tends to erase ego boundaries, and many individuals seem to become unable to distinguish between themselves and the "little son" being "mutilated" by surgery.[32]

It is significant, Moloney writes, that the all-powerful God is also called father, demanding submission.

Finally, the data presented have implications for much of the popular explanation for personality conflict in modern society. For example, the allegation is frequently encountered that the swift pace, the dirt, noise, hustle-and-bustle of modern urban living *causes* "neurosis." In many more studies than those few cited it has been abundantly shown that extreme personality conflict is endemic in societies with a simple technology, and spared all these urban stimuli. This is not to deny that nervous tension increases under modern urban conditions, but merely that the physical fact of residence in megalopolis is not a sufficient explanation of personality conflict. It may be that the formulation stated here can be applied in terms of the range of choices afforded in the modern city. Primitive cultures restrict the range of roles and goals

[30] *See* Green, 1946a, for a discussion of socialization in a modern Polish industrial community, where it was found that a combination of "bad parental care" and failure to identify with parental imagos was uncorrelated with personality conflict.

[31] Moloney, 1945.

[32] Moloney, 1946, p. 63.

available to any individual; the modern metropolis indefinitely extends and diversifies them. The possibility of conflict *within* the modern culture is thus magnified. And in conjunction with this, we know that the majority of our urban residents were either born in rural areas, or are the children of parents with a rural background. The possibility that in the city there are greater clashes developed between *earlier* and *later* roles, goals, and self conceptions than in rural areas remains to be explored.

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THE RUBRIC "FISHING AND FISHERIES"

By GORDON W. HEWES

EVEN the most familiar categories in ethnographic, geographic, and economic thinking ought to be examined from time to time, to reassure their users that they are more than accidental classifications, and are valid rubrics beyond our own language or culture. In this paper we will consider the definition of fishing, and discuss a few of the distinctive features of the activities and products ordinarily classified under this heading.[1] In view of the diversity of techniques with which men have acquired fish and other aquatic species, one may harbor certain nominalist misgivings about the unity or reality of "fishing" as a subject for investigation. Many fishing devices are similar to if not identical with those used for capturing land animals and birds —for example, nets, traps, spears, arrows, and poisons. Is there any logical reason for separating fishing from hunting, other than that these categories are traditional or convenient?[2]

The habitat of the quarry apparently is the decisive factor which sets "fishing" apart from other forms of hunting and gathering. Two aspects of the distinctiveness of the realm in which fishing operates are noteworthy. First, the special behavior of objects in the water, brought about by buoyancy, turbulence, solubility, and refraction of light; second, the dimensional characteristics of the aquatic environments. The second aspect is so obvious that it ordinarily has escaped comment. Aquatic environments are, for land-dwelling animals like man, a realm which can be exploited as if the exploiters moved in a universe with an additional dimension. The horizontal surface of water bodies. through which or from the edges of which a fisherman inserts his catching devices, has no counterpart in the terrestrial environment. The senses of water-dwelling species are able to cope with this advantage of land-dwellers to a very limited extent. Compared to the relation between the hunter and the hunted animal on land, where the sense organs of both are on a nearly equal basis, the fisherman holds all the trumps against the fish. Some of the advantage to the fisherman is undoubtedly due to the inferior intelligence of most aquatic animals compared to mammals and birds, but most of it can be attributed to the physical conditions of life in a liquid rather than a gaseous medium.

Since most fishing devices must be placed, inserted, or thrust in and out of water, their construction and materials must be adapted to aquatic conditions. The tendency for dense objects to sink, and light objects to come to the sur-

[1] This paper is a part of "Aboriginal Use of Fishery Resources in Northwestern North America," an unpublished Ph.D. dissertation, University of California, Berkeley, 1947.

[2] Simmons, 1937, asks if hunting peoples should be distinguished from fishing peoples in a cross-cultural study of the possible relations of certain social traits to economic organization.

face, for certain substances to dissolve, for loosely anchored structures to be swept away by the current, and for submerged objects seen from outside the water to appear misplaced or distorted—all have to be taken into account in designing fishing gear. This means that fishing devices are not simply transferences of land hunting devices, and that many technological features of fishing gear never appear in hunting devices used outside of the water. Sinkers, floats, multi-barbed and multi-pronged spears, harpoons, and many types of nets and traps express not simply appreciation of mechanical principles, but of the necessary adjustments for use in still or flowing water.[3] Less obvious specializations for aquatic use include the employment of insoluble pigments and adhesives on fishing gear or, more commonly, of fastenings made with cordage, and the use of alarm devices which notify the fisherman that a net or trap has received a victim.

The reality of the dichotomy between land hunting and gathering on the one hand, and fishing on the other, stresssed above, yields a definition of "fishing" based upon the habitat of its objects. This is an ecological rather than a taxonomic definition. The awkwardness of the latter, exemplified by Max Schmidt's definition of fishing[4] which is based on taxonomic criteria, is apparent when it is realized that, following such a definition, the taking of sturgeon and the taking of porpoise are fishing and hunting, respectively, whereas prying mussels from rocks is classified as fishing. We prefer to follow the practice of modern commerce, which lumps fish, whales, oysters, seals, and even precious coral together as the objects of fishing.[5] Admittedly, there is an intellectual gap of considerable magnitude between the fish and the seal, which requires that the sealer, on occasion, must be prepared to use all the stratagems of the land hunter, such as imitating the seal's cry, disguising himself as a seal, and so on. But this distinction is only relative, for between the behavior of a fish and of a mussel the intellectual gap is far wider, and it is reflected in the methods of acquiring each.

A technological definition of fishing such as Murdock and his collaborators use in their cultural outline, with separate categories for marine hunting, collection of marine fauna, and fishing, seems unnecessary.[6] Actually, these distinctions are partly technological and partly taxonomic. An analysis of fishing and hunting devices along the lines of Clellan S. Ford's sample study of another phase of material culture (containers) would nevertheless be useful in clarifying the distinctions between the two activities.[7]

[3] Harpoons, multi-barbed, and multi-pronged spears are occasionally employed for hunting land animals or birds, but their characteristic use is for fishing. In some instances they may be transferences of fishing devices to hunting.

[4] Schmidt, 1923, pp. 67–74.

[5] Tressler, 1923.

[6] Murdock and others, 1945, pp. 5–6.

[7] Ford, 1937.

For the present study we shall define "fishing" as that category of human activity which is connected with the capture or gathering of animals (or plants) which regularly dwell in the water. The distinction between "capturing" and "gathering" should not be emphasized; the first suggests that the object acquired is capable of motion, the second that the object is passive and unable to escape. But clams may elude the gatherer by burrowing, while highly motile small fishes are usually acquired by a scooping process with an effort as unlike "capture" as shaking fruit from a tree. Here we shall consider sea-mammal hunting as a form of fishing. Arbitrarily, we exclude sea otter, beaver, muskrat, and water-loving ungulates like the moose, as well as water fowl. However, and equally arbitrarily, if frogs, turtles, or crocodiles were important in our area, we probably would have included them with sea mammals as a legitimate object of fishing.[8]

The Attribute of Lineality

Except for the habitats of the few truly pelagic species, roaming the deep seas, aquatic environments are characteristically elongate. This quality is particularly striking if one attempts to deal with fisheries phenomena cartographically. This has been one of the disadvantages of fisheries geography. A river or a narrow littoral zone may be the abode of a dozen commercially valuable species, which a single map is unable to show as separate features. Except where the continental shelf is very broad, small-scale maps fail utterly to convey the locational facts of importance in the fisheries geography of an area. The crowding of information along shore-lines and streams often confuses rather than clarifies, as reference to many published maps of fishery resources will show. The cartographic alternatives are separate maps for each species, or generalized maps, both unsatisfactory.

It is much more difficult to determine what, if any, significance this pronounced lineality may have. For one thing, it facilitates the segmentation of aquatic environments for purposes of ownership or administration, both among primitive and modern peoples. In a literal sense, fairly homogeneous aquatic environments may cut across widely differing terrestrial environments or life zones, thus unifying one sector of the economic lives of peoples who inhabit otherwise diverse territories. In Northwestern North America, the Columbia River and its tributaries offer a good example of such a unifying aquatic feature. In the same way, the littoral zones of continents and islands tend to

[8] The practical and technical literature of fishing and fisheries has not found it necessary to define its subject too closely. *See* Tressler, 1923, pp. 190–199. A comparison of literatures on fishing and fisheries in different languages (including non-Indo-European ones such as Chinese and Japanese) shows that our broad definition is in accord with the categories used by most complex cultures where fishing is important. But search of the legal literature in fish and game cases would doubtless reveal some instances of hair-splitting definitions of these activities.

make similar the fishing activities of coastal peoples in spite of greatly differing hinterland economies. The oceans are far more alike in their biota in similar latitudinal zones than are corresponding land areas. Coasts and river courses may have been favored as migration routes, but the reasons for their use as such is not connnected with the continuous availability of aquatic foods which they afford, but rather with the fact that water-level routes generally offer the least obstacles to movement.[9]

While aquatic environments tend to have greater uniformity than terrestrial environments of similar extent, it should not be concluded that productive fishing sites are distributed evenly throughout large bodies of water. On close examination, local variations in productivity are quite evident, even in small streams, lakes, or shore areas, where they may be produced by variations in depth, temperature, nature of the bottom deposit, movement (tides, currents, and in streams, velocity of flow), and shore conditions. The same river, at stations a few miles apart, may be deep, clear and cold, and shallow, muddy, and warm.[10] The relation of local hydrography to biotic conditions is exceedingly complex, both in marine and fresh waters.

The Stability of Fishing Sites

The relative persistence of some kinds of fishing sites as foci of concentrated economic activity is notable. Waterfalls, river-mouth bars, offshore rocks, and similar locations may yield annual fish harvests through long periods of time and through cultural successions. Such stability of productivity need not mean continuous production, but recurrent or seasonal yields, as is the case with crops or the increase from animal herds. Many aquatic species, like salmon, have annual runs of a few weeks duration at any one place, so that in a period of less than a year their appearance might be regarded as an example of a resource which exhibited a maximum variability in abundance, from vast numbers to zero. On a long-term basis, the annual salmon run would have to be considered as an invariable phenomenon. There has been confusion on this seemingly obvious point, as in Wissler's statement that the culture of the North American Salmon Area has a typical "instability of residence."[11] In one sense, nothing could be more stable than the repetition, year after year, of the same shifts of residence from winter village to a round of summer fishing camps, invariably at the same sites, and in the same sequence. There is a significant difference between a residence pattern which involves an annual and invari-

[9] Some bird migrations, however, seem to follow coastlines because of the continuous availability of aquatic foods.

[10] Needham, 1938, pp. 148–149, gives a brief classification of stream-bank environments. He notes, p. 127, that the width of a stream in itself is an unimportant physical factor in comparison to many which affect aquatic life.

[11] Wissler, 1938, p. 10.

able series of sites, and one which permits a flexible migration from one casual campsite to another.

Whether fisheries in general outlast other natural or cultivated food resources in given regions is difficult to determine. Depleted hunting grounds, grazing lands, and soils are common enough, but as between them and depleted fisheries it is hard to prove which have been most sensitive to human abuse. There would seem to be no hope of finding a common measure of sensitivity to exploitation. Without providing an answer to this question, archeology has demonstrated the possible duration of certain kinds of fishing sites under intensive use, in the case of shell middens.[12] In many cases the species represented in the refuse deposits are still abundant in the locality. On the other hand archeology has provided numerous examples of the ultimate failure of agriculture in a region, which may be correlated, however, with changes in climate rather than soil-depletion.

In many aquatic species the ratio of seed to harvest, or the amount of brood-stock which must be preserved to insure a future yield, is extraordinarily small. This should mean that a prolific species might maintain itself for a very long period in the face of a heavy annual catch.[13] This must have been true of many fisheries exploited by aboriginal groups. The marked declines observable in freshwater fish populations subject to heavy commercial fishing have often been composite effects, not only of over-fishing, but of stream pollution and blockage, arising from intensive settlement of the land.[14]

The stability of fishing sites as productive centers in the landscape should not be taken to mean that they are immune from natural catastrophes. Rivers, lakes, beaches, and shorelines are themselves the agents or indicators of geological change, and sudden drastic alterations are particularly associated with them. Indeed, Needham stated that "the most evident characteristic of streams in general is their lack of stability," but he had reference to small-scale changes that affect the distribution of trout pools.[15] Landslides may block streams or lake outlets, beaches and bars may be washed out by storms, and floods may cause shifts in the beds of streams and changes in the banks of rivers. Slight alterations in the temperature or salinity of large bodies of water may produce drastic biotic changes.

Predictability of Aquatic Harvests

The harvests from fishing often can be predicted in terms of date and vol-

[12] Cook, 1946.

[13] Five out of six spring-run Chinook salmon on the Columbia River are now caught; such a low spawning escapement is not unusual in a commercial fishery. Van Cleve, 1945, p. 42.

[14] Depletion in certain marine fisheries, where effects of erosion, pollution, and blockage are inoperative, must be attribtued mainly to over-fishing. It should be noted, also, that these pelagic and ground-fish resources were never seriously exploited by non-commercial fishermen.

[15] Needham, 1938, p. 2.

ume. This is true of migratory species in streams, of species which spawn in shoal water or on beaches at high tide, and even of some pelagic migrants, such as the spectacular sea-worm *Palolo viridis* in parts of Oceania. Periodic mass movements of aquatic species like the Pacific salmon have their parallels among land mammals and birds, but the practical difficulties of taking full advantage of these land or air migrations are considerably greater than with water dwellers. In the case of mass movements of herds of land mammals, the hunters are seldom so fortunate as to be able to wait at a regular campsite for the arrival of the herd. Usually such a hunt involves an arduous pursuit, as with the caribou and bison.

The regularity of certain fish migrations contributes to the well-known security of peoples dependent upon fishing for subsistence. The high concentration of individuals in confined sections of a river, or massed in the surf, makes the effort expended by the fisherman extremely low in proportion to the effort required to obtain equal amounts of other edible products, agricultural crops not excepted. In exchange for a few hours of heavy muscular effort, a single fisherman, in many cases equipped with the simplest of gear, may land several thousand pounds of fish, considerably more than he could consume in a year. Compared to the weeks or months of heavy labor required by a primitive farmer to produce a year's food supply, fishing is a highly efficient technique.[16]

A "run" of fish like salmon, it should be understood, is ordinarily not a compact body of fish surging steadily upstream, but rather a series of diurnal pulsations, with a daily peak and ebb, heralded by a few pioneers and trailing off at last to a train of stragglers. On a large river like the Columbia, a major salmon run might have, at a given moment, a total length of several hundred miles, with local nodes of concentration, and long empty intervals. Runs of shore-spawning fish like smelt, of course, may be of a few hours duration, often coming in and going out with a single tide.

Water-borne migrations, while normally predictable, are subject to interruption or other disturbances. Fluctuations in the annual volume of a migration may be caused by changes in hydrographic conditions, abnormal precipitation, premature frost or early thaw, and biological factors, such as the four year cycle of Fraser River red salmon (*O. nerka*). Despite these fluctuations, the annual fishery crop is ordinarily less liable to failure than are wild or cultivated crops on the land. Salmon runs are seldom if ever complete failures, at least on the larger river systems. From 1899 to 1934 the annual index of abundance of Fraser River red salmon never fell below 19.0, though in one year (1901) it reached 421.4.[17] Our generalizations apply to the middle lati-

[16] This relation still holds, even in our own economy. In the United States, the average commercial fisherman or fishery worker produced 47,000 pounds, as against 34,500 pounds produced by the average farmer or farm-worker. U. S. Secretary of the Interior, 1945, p. 131.

[17] Rounsefell and Kelez, 1938, p. 772.

tudes and to sub-arctic regions. The fisheries of the tropics exhibit much less periodicity.

Dietary Importance of Fishery Products

Measured by the caloric effort required to obtain them, aquatic foods as a whole have an exceptionally high degree of nutritional efficiency.[18] Fish and other water-dwelling animals are characteristically rich in fat and vitamins, and they are also valuable for their quantities of assimilable calcium, phosphorus, iodine, and common salt. It is also important that most of these food values can be retained in the sun-dried or smoke-dried state in which most primitive peoples preserve them. Dried, smoked, or pulverized fish products, as well as the oils extracted from the flesh or livers of fish, are easily packed, stored, or transported.[19]

In the ratio of weight to nutritional efficiency (measured in calories) dried salmon is superior to the cereals which, while they have a considerably higher caloric value per pound, require cooking (and hence additional expenditure of fuel-energy) before their full value can be assimilated.

It would be worthwhile to determine whether or not significant differences in vitality, attributable to dietary differences between peoples, have played an important role in culture history.[20] Nutrition specialists in our own society do not hesitate to blame inadequate food for the higher incidence of many diseases, lowered fertility and, in extreme cases, mental defect, which occur in certain submerged groups.[21] This has seldom been tested among primitive groups still dependent upon the wild environment for their subsistence, but the assumption should not be rejected solely because it seems simplistic.[22] The assumption of differential vitality of peoples because of differences in diet is implicit in many anthropological studies, the authors of which might deny with vehemence any environmentalist leanings.

The possible relation of diet to cultural intensity may be obscured by the failure to realize the importance of quality as well as quantity in a food supply. The increased volume of food which intensive agriculture makes possible does not necessarily mean that the individual diets have improved in quality. The reverse is more likely. Linton's paper on Middle American crops and cultures

[18] Tressler, 1923, pp. 263–279.

[19] For the vitamin content of liver and body oils of certain Pacific fish, *see* Morgan, Kimmel, and Davison, 1939.

[20] Huntington, 1945, pp. 417–452.

[21] Endemic nutritional diseases such as beri-beri and pellagra are usually confined to regions with monoculture, or to urban areas. Primitive groups, with more varied food resources, have probably escaped most deficiency diseases of this type.

[22] Price's field studies are a beginning in this direction, but he is a dental surgeon, not an ethnographer. Price, 1942.

is an example of the recognition of the qualitative aspects of diet in relation to population increase and possibly to cultural level.[23] For the North Pacific Salmon Area, it might be that a diet rich in fish and other aquatic foods, while not contributing directly to the nourishment of the brains of individual members of the various groups inhabiting the area, could have resulted in a higher average vitality. This, in turn, could have expressed itself in cultural manifestations which a less adequately nourished population (in terms of food quality rather than quantity) might lack the energy to accomplish.[24]

Obviously the point can be exaggerated. The organs, flesh, and blubber of seals are an excellent source of vitamins A and C, as well as being good protein.[25] Even so, such a superior food seems to have no marked effect on the Alacaluf and Yahgan of Tierra del Fuego, who did not greatly surpass in cultural achievement their dietarily more restricted Ona neighbors. The problem is one worthy of further investigation, and the study of small groups subsisting largely on fish and related aquatic animals may yield a part of the answer.

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[23] Linton, 1940, pp. 32–40.
[24] Angel, 1946, pp. 500–501.
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CULTURE CONTACT ON THE NORTHWEST COAST, 1785–1795

By GEORGE I. QUIMBY

INTRODUCTION

A SOMEWHAT casual survey of published sources indicates that there were Chinese, Hawaiians, Negroes, and natives of the Philippines among the polyglot crews of European and American vessels trading on the Northwest Coast of America between 1785 and 1795. Researches by Heizer show that some Japanese were on the coast at this time and perhaps earlier.[1] Thus many Europeans and some non-Europeans visited the Northwest Coast almost a hundred years before any anthropologist set foot in the region.

With the exception of the Japanese these Europeans and non-Europeans came to the Northwest Coast in ships engaged in the fur trade or exploration, or both. Such ships visited the coast rather frequently. Below in tabular form there are presented the approximate number of ships on the Northwest Coast by year from 1774 to 1794.[2]

YEAR	VESSELS	YEAR	VESSELS	YEAR	VESSELS
1774	1	1785	1	1790	8
1775	2	1786	9	1791	16
1776	2	1787	6	1792	30
1778	2	1788	8	1793	17
1779	2	1789	14	1794	12

Previous to 1774 the Northwest Coast, at least the northern part, probably had been visited by Russians. As early as 1741 Bering and Cherikov made a landfall on the northern part of the coast.

Voyages to the coast before 1741[3] were likely apocryphal and hardly worth the listing. These voyages were those of Juan de Fuca in 1592, Admiral de Ponte (or Fuente or de Puente) in 1640, and Shapely in 1640.

The voyages to the coast between 1774 and 1779[4] were exploratory—Pérez in 1774, Heceta and Bodega y Quadra in 1775–76, Cook in 1778, and Arteaga and Bodega y Quadra in 1779. It was Captain Cook's voyage of exploration that showed the world the possibilities of the fur trade with the Indians of the Northwest Coast but this trade was not begun until 1785. In

[1] Personal communication from Robert Heizer. Japanese came to the Northwest Coast on disabled craft carried from Japan to the coast by wind and currents. Heizer has compiled considerable information on this subject.

[2] Taken largely from Howay, 1930, with modifications and additions.

[3] Ferrelo, 1543, and Vizcaino, 1603, do not seem to have gone north of the coast of southern Oregon.

[4] Bolton and Marshall, 1932, p. 395.

the succeeding years, however, ships visited the coast in large numbers and this maritime fur trade lasted until about 1835.

It is my intent in this paper to describe, in a superficial way, the non-European culture contacts with the Northwest Coast in the beginning years of the maritime trading period—1785–1795. Non-European peoples were significant minorities among the personnel of trading and exploring ships on the Northwest Coast during this period.

Most European nationalities were represented in the crews and registries of these ships—Spanish, Italian, Austrian, Swedish, Portuguese, French, English, and New England–American. The non-European minorities carried by these ships were the Chinese, Polynesians, Negroes, and natives of the Philippines previously mentioned.

The Chinese on the Northwest Coast

In 1788 Captain John Meares sailed from Canton to Nootka to engage in the fur trade. Included in his crews were fifty Chinese, among whom were smiths and carpenters.[5] At Nootka Meares built an establishment on shore, a two-storey house surrounded by a stockade. He also built a sailing vessel of forty or fifty tons. The construction of both the house and the vessel were undertaken by the Chinese carpenters and smiths, assisted by "divers natives of America."

Meares' new schooner, the *North West America* (the first sailing vessel built on the Northwest Coast) traded along the coast from September, 1788, to June, 1789. The crew of the schooner consisted of seven Europeans "and also assisting a native of China, a carpenter, and Assee and Achaw, mariners of the same country."[6] The schooner visited the Queen Charlotte Islands in the course of this trading cruise from Nootka northward.

The Chinese smiths and armorers were employed by Meares in the manufacture of articles for trade with the Indians. He said of them,

> The Chinese armourers were very ingenious, and worked with such a degree of facility that we preferred them to those of Europe.[7]

At least one Chinese was buried at Nootka. In his Appendix XII (1790) under the date of April 21st, 1789, Meares writes:

> . . . departed this life Acchon Aching, a seaman; he was delirious from the time of his fall from the cross trees till he died; interred the corpse on shore.

The Chinese brought to Nootka by Meares were on the Northwest Coast from May, 1788, until at least May, 1789. Many of the Chinese were quartered

[5] Mears, 1790, p. 3.
[6] *Ibid.*, Appendix XI.
[7] *Ibid.*, p. 88.

in Meares' establishment on shore. There is no record of Meares having carried the Chinese back to Canton and some of them, at least, may have been assimilated by the Northwest Coast Indians.

In 1789 forty-five Chinese were carried to the Northwest Coast by Captain Metcalf. Captain Vancouver records that

> an American snow, called the Eleanor, mounting ten guns, navigated by ten Americans and forty-five Chinese or other inhabitants of that country, and commanded by Mr. Metcalf, on a commercial voyage to the coast of Northwest America in the fur trade; . . . sailed from China in the year 1789.[8]

Some Chinese were brought to the Northwest Coast on the *Argonaut* and the *Princess Royal* in 1789. According to Meares,[9]

> The Princess Royal and Argonaut, loaded with stores and provisions of all descriptions, with articles estimated to be sufficient for the trade for three years, and a vessel on board in frame, of about thirty tons burthen, left China accordingly in the months of April and May, 1789. They had also on board, in addition to their crews, several artificers of different professions, and near seventy Chinese, who intended to become settlers on the American coast, in the service, and under the protection of the associated company.

The journal of Captain James Colnett who commanded the *Argonaut* lists only twenty-nine Chinese aboard that ship and none for the *Princess Royal.* In his "Remarks on the Argonaut's Outfit, 1789" Captain Colnett stated,

> Besides the aforementioned Crew, being determined to form a Settlement at Nootka, Build a fort and also craft to carry on the Trade on a large scale, the following Chinamen were put on board me for that purpose: 7 Carpenters, 5 Blacksmiths, 5 Bricklayers and Masons, 4 Taylors, 4 Shoemakers, 3 Seamen, 1 Cook.[10]

Consequently the "near seventy" Chinese settlers stated to be on the *Argonaut* by Meares dwindle to twenty-nine when counted by Colnett.

Colnett and his crew were captured by the Spanish at Nootka in July, 1789. Although Colnett was sent to San Blas almost immediately the Chinese and Portuguese members of the crew remained at Nootka until the end of October, 1789. In November they too were brought to Mexico.

Some of the Chinese deserted the *Argonaut* in Mexico. Colnett states in his journal,

> Six of my Chinamen left me, and two Portuguese, and there was only a pretended enquiry made after them.[11]

Colnett and his crew were released by the Spanish in July 1790, and he departed for the Northwest Coast. On September 13, 1790, the *Argonaut*

[8] Vancouver, 1798, Vol. 2, p. 135.
[9] Meares, 1790, Appendix I, p. 3.
[10] *See* Howay, 1940, p. 15.
[11] *Ibid.*, p. 125.

launched and parted company with her long boat near San Francisco. The long boat, carrying a crew of eight men including a Chinese carpenter and a Chinese armorer sailed from San Francisco to Berkeley Cove near Nootka and rejoined the *Argonaut* October 22, 1790. In March, 1791, the *Argonaut* departed from the Northwest Coast and sailed to Canton.

Thus the Chinese with Captain Colnett were on the Northwest Coast from July to November in 1789, in Mexico from November, 1789, to July, 1790, and, with the exception of those who deserted in Mexico, back on the Northwest Coast from October, 1790, to March, 1791.

Chinese Trade Goods

Included in the trade stores carried by the *Argonaut's* long boat on her voyage from San Francisco to Nootka in 1790 were "China cash" (coins), "China buttons" and a "China Forge."[12]

A Nootka Indian in China

Early in 1788 a Nootka man living in China near Canton was given passage to the Northwest Coast by Captain Meares of the snow *Felice Adventurer*. This Nootka man was named Comekela and was a brother of Maquilla who was a chief of the Nootka. The following excerpt from Meares' Journal[13] shows the cosmopolitan character of his passenger list at the time of leaving China in 1788:

> The other natives of the Sandwich Isles and America, who were received on board, had been brought to China by different ships, rather as objects of curiosity, than from the better motive of instruction to them, or advantage to commerce:—they consisted of a woman of the Island of Owyhee, named Winee, who was in a bad and declining state of health; a stout man and boy from the Island of Mowee, and a native of King George's Sound (Nootka); the barbarous nature of whose inhabitants rendered it an useless experiment to accompany him with any of those advantages provided for the others.

Despite the lack of "advantages provided" for him, Comekela stood the voyage well, for Meares remarked in his journal,

> The man from Nootka Sound, however, possessing a very robust constitution, bore the inconveniences of the voyage with little complaint.[14]

The *Felice Adventurer* reached Nootka Sound in May of 1788. Meares was planning to use Comekela as an entering wedge into Northwest Coast society and thereby gain trading advantages. For his first trip ashore, Comekela was dressed as follows:

> His scarlet (regimental) coat was decorated with such quantities of brass buttons and

[12] *Ibid.*, p. 179.
[13] Meares, 1790, p. 9.
[14] *Ibid.*, p. 27.

copper additions of one kind or other, as could not fail of procuring him the most profound respect of his countrymen, and render him an object of the first desire among the Nootka damsels. At least half a sheet of copper formed his breast-plate; from his ears copper ornaments were suspended, and he contrived to hang from his hair, which was dressed en queue, so many handles of copper saucepans, that his head was kept back by the weight of them, in such a stiff and upright position, as very much to heighten the singularity of his appearance. For various articles of his present pride Comekela had been in a state of continual hostility with the cook, from whom he had contrived to purloin them; but their last and principal struggle was for an enormous spit, which the American had seized as a spear, to swell the circumstances of the Magnificence with which he was on the moment of dazzling the eyes of his countrymen;—and situated as we were, this important article of culinary service could not be denied him. In such a state of accoutrement, and feeling as much delight as ever fed the pride of the most splendid thrones of Europe or the East, we set out with him for the shore, when a general shout and cry from the village assured him of the universal joy which was felt on his return.

The whole body of inhabitants moved towards the beach, and with a most unpleasant howl, welcomed him on shore . . . . After the first ceremonies of welcome were over the whole company proceeded to the king's house, into which persons of rank were alone permitted to enter, and where a magnificient feast of whale blubber and oil was prepared.[15]

The plan of Meares to exploit his friendship with Comekela in obtaining advantages in trade was frustrated. In June, 1788, Meares naively complained that

Comekela was, at first, very active in forwarding our commercial arrangement; but he had become very deficient in his native tongue, and he now spoke such a jargon of Chinese, English, and Nootkan languages, as to be by no means a ready interpreter between us and the natives;—besides, in returning to the manners of his country, he began to prefer the interests of his countrymen, and, amidst the renewed luxuries of whale flesh, blubber, and oil, to forget the very great kindnesses we had bestowed upon him.[16]

In addition to having spent some time in China, Comekela had visited Hawaii. This fact, plus his relations with Tianna, an important Hawaiian sojourning on the Northwest Coast, is recorded by Meares as follows:

Tianna and Comekela were old acquaintances, but by no means intimate friends, as the former held the latter in a very low degree of estimation; and, accordingly, we did not observe any very cordial appearance of joy at their present meeting. As Comekela had been in the Sandwich Islands, on his first leaving America, the ship having stopped there for refreshments, he was qualified to give Maquilla an account not only of Tianna, but the country from whence he came, and he did it probably to the disadvantage of both.[17]

[15] *Ibid.*, pp. 110–111.
[16] *Ibid.*, p. 121.
[17] *Ibid.*, p. 206.

Thus the evidence of Meares indicates that in 1788 there was a Nootka Indian who had been to Hawaii and China and who spoke a jargon of Chinese, English, and Nootkan.

Hawaiians on the Northwest Coast

I have already introduced the Hawaiians carried from China to the Northwest Coast by Meares. These were the man Tianna, "a stout man and boy from Mowee," and "a woman of the Island of Owyhee, named Winee."

In October, 1792, Captain Vancouver recorded in his journal the following:

> I received on board two young women for the purpose of returning them to their native country, the Sandwich ilsands; which they had quitted in a vessel that arrived at Nootka. . . . [18]

A Hawaiian was aboard the ship *Columbia Rediviva* of Boston. A journal of the Columbia's voyage under the date of June, 1791, states that,

> Ottoo, our Sandwich island boy, found means to leave the ship and go among the natives.

Captain Gray captured the chief (named Tootiscoosettle), held him hostage until Ottoo was brought from hiding and forced him to witness the punishment of Ottoo by flogging for his attempted desertion.[19]

This Hawaiian participated to some degree in an attempt of the Indians to capture the *Columbia*. Vancouver,[20] recording in his journal a conversation he had with Captain Gray of the *Columbia*, says,

> Whilst he remained at Clayoquot, Wicananish, the chief of that district, had concerted a plan to capture his ship, by bribing a native of Owhyhee, whom Mr. Gray had with him to wet the priming of all the fire-arms on board, which were constantly kept loaded, . . .

Captain George Dixon reports the introduction of Hawaiian tapa cloth in June, 1787. Dixon says,

> One of the Chiefs who came to trade with us, happening one day to cast his eyes on a piece of Sandwich Island cloth, which hung up in the shrouds to dry, became very importunate to have it given him . . . and the Indian was perfectly overjoyed with his present. Soon after day-light the next morning, our friend appeared alongside, dressed in a coat made of the Sandwich Island cloth, given him the day before, and cut exactly in the form of their skin coats . . . [21]

Natives of the Philippines on the Northwest Coast

Captain Douglas of the *Iphigenia Nubiana* had with him a native of the Philippines in 1788–89. In his journal he states,

[18] Vancouver, 1798, I, p. 414.
[19] Howay, 1941, p. 186.
[20] Vancouver, 1798, I, p. 215.
[21] Dixon, 1789, p. 189.

My servent was a Manilla man, and spoke the language (Spanish) very well . . . "[22]

This Manilla man also spoke English, and apparently was able to converse with the Nootka Indians. Douglas says,

The servent, was bargaining with the natives for some fish they had in their boat; the Spaniards not understanding what was said, ordered him on board the Commodore's ship . . . [23]

One of a group of sixty Indians who visited Captain Vancouver in September of 1793 may have been a native of the Philippines who had become a naturalized Nootka. Vancouver says,

Amongst these visitors was one whose character we could not define. This was a young man, . . . dressed in a blue jacket and trowsers, . . . he was fond of segars, which he smoked in the Spanish fashion, discharging the fumes through his nostrils, and also of snuff . . . All our different kinds of provisions were perfectly familiar to this young man, . . . we were inclined to suppose him a native of the New Spain, who might have possibly have deserted from some of the Spanish vessels . . . [24]

Negroes on the Northwest Coast

A British brigantine, the *Venus*, on the Northwest Coast in 1792 had a number of Negroes in her crew. Howay,[25] reports that,

The *Viage hecho por las Goletas*, etc. states that the *Sutil* and the *Mexicana*, Spanish exploring schooners, met her in August, 1792, near Queen Charlotte Sound, and described her as of graceful hull, with boarding nettings six feet high, and carrying a crew of 22 men, mostly Joloano negroes.

In speaking of a murder near Nootka in 1782 Captain Vancouver says,

Doubts arose whether this horrid act had been perpetrated by the natives, or by a black man of the most infamous character, who had deserted from the Spanish vessel . . . [26]

The *Columbia Rediviva* of Boston carried a Negro to the Northwest Coast. The journal of this voyage related that

Captain Gray's servent, a young black man Marcus Lapius a native of the Cape de Verd Islands was killed by the Indians in August of 1788.[27]

SUMMARY AND CONCLUSIONS

There were Chinese, Hawaiians, Negroes, and natives of the Philippines among the mixed crews of European and American vessels trading on the

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[22] Meares, 1790, Appendix XII.
[23] *Ibid.*
[24] Vancouver, 1798, p. 394.
[25] Howay, 1930, p. 128.
[26] Vancouver, 1798, I, p. 402.
[27] Howay, 1941, p. 37.

Northwest Coast between 1785 and 1795. There were also Japanese on the coast at this time and perhaps earlier.

The sources for this period show that the ships' crews interbred freely with Northwest Coast Indian women. Thus any physical anthropological study of Northwest Coast Indians must recognize the probability of Chinese, Japanese, Negro, Filipino, and diverse European strains in the physical types of the Northwest Coast. Any interpretation based upon the recognition of these strains in Northwest Coast Indians must take into account the interbreeding during the period of the early maritime fur trade.

Similarly in the framework of Northwest Coast Indian culture any recognition of Chinese, Japanese, African and Polynesian influences should be examined in terms of the ethno-historical records of the maritime trading period.

Parts of Northwest Coast culture as it existed in the period of ethnological examination may have had its roots in the stimulus of culture contact during the time of the maritime fur trade. The published and manuscript sources for this period may offer significant evidence. In the field of material culture, for instance, it is possible to show that the twisted iron collar was introduced by Captain Ingraham of Boston; that sails were first successfully adapted for use on dug-out canoes about 1790; and that the totem pole made its first appearance in 1791.

As early as 1778 Captain James Cook hinted that some aspects of Northwest Coast culture were changing because of the stimulus of culture contact. For instance, of wood-carving he said,

> Their great dexterity in works of wood, may, in some measure, be ascribed to the assistance they received from iron tools. For, as far as we know, they use not other . . . And though, originally, their tools must have been of different materials, it is not improbable that many of their improvements have been made since they acquired a knowledge of that metal, which is now universally used in their various wooden works. The chisel and the knife, are the only forms, as far as we saw, that iron assumes amongst them.[28]

These few examples of material culture change illustrate the nature of the information available from published sources dealing with the period of early contact. In this period Northwest Coast culture was changing, partly at least, because of outside influences operative upon the culture. Any attempt to describe, to document, and to interpret the nature and effect of these influences would be important in any historical perspective of Northwest Coast culture.

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RICE CULTIVATION IN ASIA

By INEZ ADAMS

THE terminology employed by writers discussing Asiatic rice agriculture has raised a problem: are the cultivated varieties of rice distinctly separable into one group that will grow under none but irrigated conditions, and another that demands moderate amounts of moisture but is successfully produced only by dry farming? The terms used in the literature frequently bear this implication. They include references to "wet" and "dry," "dryland," "lowland," "upland" and "mountain" rice. In anthropological studies whose purpose is merely descriptive this creates confusion. When extended to comparative studies and historical reconstructions, with the two methods of cultivation treated as distinct for the conclusions reached, it becomes necessary to examine the distinctions that might justify such use.

As early as 1820, John Crawfurd, writing his "History of the Indian Archipelago," observed that rice is known as "padi . . . in all languages and dialects from Madagascar to the Philippines."[1] He distinguished in Java a "marsh" rice, sown in nurseries and transplanted to flooded fields, and a "mountain" or "dryland" rice, grown on arable uplands. These terms remain current. Lowie defines them thus:

> The innumerable variations of the plant fall broadly into two categories, with corresponding techniques of husbandry. "Swamp" rice can be grown only in marshes or under irrigation. "Mountain" rice yields smaller crops, but can be grown anywhere with normal precipitation.[2]

Wilhelm Wagner[3] speaks in a similar sense of "den gewöhnliche Wasserreis" and "den sogenanten Bergreis," in his account of Chinese agriculture. C. Daryll Forde makes the same general differentiation of cultivated rices falling[4] into two groups due to the physical requirements of the plant. Wissler[5] mentions "The cultivated varieties known as 'hill,' 'upland,' or 'dryland' rice," in contradistinction to the "aquatic varieties." Keesing,[6] in one work on the Philippines, employs "wet" and "dry" rice; elsewhere[7] he speaks of "dry agriculture" in Indonesia, as distinguished from the practice of terracing with irrigation.

E. M. Loeb,[8] in his general ethnography of Sumatra, notes rice raised in both flooded and dry fields by the Bataks; in the Minangkabau, . . . "wet and dry rice fields are worked together by the men and women . . . ";[9] in Nias, . . . "both the wet and dry variety are grown . . . ";[10] in Atjeh, "Rice is of both the wet and dry variety. The wet rice fields, when not laid in swamps, are irrigated

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[1] Crawfurd, 1820, Vol. I, p. 358. [2] Lowie, 1938, p. 294. [3] Wagner, 1926.
[4] Forde, 1934. [5] Wissler, 1946. [6] Keesing, 1937. [7] *Idem.*, 1934.
[8] Loeb, 1935. [9] *Ibid.*, p. 101. [10] *Ibid.*, p. 132.

by rain water which is allowed to trickle down from dams . . . ";[11] among the Gajo and Alas, "Usually wet rice is cultivated, water being obtained from the rivers . . . ";[12] in southern Sumatra, the land is unsuitable for irrigation, so little "wet" rice is cultivated. In a historical note,[13] Loeb concludes that the Malaysians of Sumatra had learned to grow rice, ". . . at least the dry variety," before the Hindu occupancy. Cora Du Bois[14] believes that "dry" rice was the original staple of the Alorese. With reference to other descriptions, "dry" rice could be severally interpreted as the "dry-weather paddy" described by Scott[15] in Upper Burma; or as the "dry paddy" described in Mysore by Iyengar[16]—here referring to a district heavily watered by the monsoon rains, where artificial irrigation is not necessary. It could also be interpreted as the "dry-land" rice used by Fay-Cooper Cole.[17]

The Indian Department of Commercial Intelligence and Statistics[18] gives three classes of rice, according to their season of growth. The Philippine Department of Agriculture and Commerce[19] lumps all of the rice as "palay," taking the local variant of the widely used native term "paddy." From Oriental usage, Wickizer[20] defines "paddy" as an inclusive term for the growing plants, the harvested stalks, and the threshed, unhusked, grain. Keesing[21] gives "palay" as the native name for rice on the stalk. Some of the literature extends "paddy" to include irrigated rice fields; in this sense Keesing[22] uses it. Wickizer[23] adds that "wet paddy" and "dry paddy" are terms commonly used in Malaya to denote both the system of culture and the product.

The terms "upland" and "lowland" rice are even more current than "wet" and "dry." Verrier Elwin[24] uses them in describing the Baiga; R. F. Barton[25] for the Mountain Province of the Philippines, and Krieger[26] for the Philippines in general. Agronomists who use them include Camus[27] in the Philippines, and Jacobson[28] in the same area. Pelzer,[29] in his recent geographical study, considers them convenient, and Wickizer[30] likewise. Camus[31] adds "mountain" rice to "upland" rice, observing that the same varieties can be grown in both habitats, though some adapt best under the methods of cultivation obtaining in the mountains, others to those used in the uplands. His separation of "upland" and "lowland" rices is complicated by the fact that some of the Philippine "lowland" rices that are grown under irrigation are raised in non-irrigated nurseries or dry farmed previous to transplanting. "Dryland" nurseries for "wet

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[11] *Ibid.*, p. 224. [12] *Ibid.*, p. 248. [13] *Ibid.*, p. 301. [14] DuBois, 1944.
[15] Scott, 1911. [16] Iyengar, 1927. [17] Cole, 1945.
[18] India Dept. of Commercial Intelligence and Statistics, 1940.
[19] Philippine Islands, Dept. of Agriculture and Commerce, 1935.
[20] Wickizer and Bennett, 1941. [21] Keesing, 1937. [22] *Ibid.*
[23] Wickizer and Bennett, 1941. [24] Elwin, 1939. [25] Barton, 1930.
[26] Krieger, 1942. [27] Camus, 1921. [28] Jacobson, 1915. [29] Pelzer, 1945.
[30] Wickizer and Bennett, 1941. [31] Camus, 1921.

paddy" are also described in an official report[32] on the Pahang district in Malaya. Ethel Simkins,[33] in an article on the coastal plains of south India, designates "hill" rice, "upland" rice, and "lowland" rice. R. L. Pendleton[34] uses "upland" and "lowland" for Mindanao.

Detailed ethnographic accounts, especially those using native classifications of rice, multiply both the varieties and the methods of cultivation. Instances are Albert E. Jenks'[35] account of the Bontoc Igorot, Ralph Linton's[36] of the Tanala, and Nevill Parry's[37] of the Lakher. These enumerate the native names for the kinds of rice, the dates of sowing and harvest, the number of crops grown per year, the kinds of soil used and their preparation, with other details of cultivation. Parry[38] lists fourteen varieties distinguished by the Lakher and Lushai, with native descriptions of each, and of soil preferences. An elaborate but less satisfying description is Grierson's,[39] of Bihar. He classifies rice as sown broadcast or transplanted, lists over fifty varieties sown broadcast and over eighty transplanted, then proceeds to state that practice varies with the locality, a variety broadcast in one locale being sometimes treated by transplanting in another. Even if true for Bihar, this distinction would make nonsense elsewhere. Thus, in the Konkan, Ranade[40] describes seedlings grown for transplanting in nurseries, that are sown broadcast.

The agronomists have done their best to clear up the confusion.[41] First, as to kinds of rice: O. T. Faulkner,[42] in discussing West Africa, observes that the terms "hill" or "dryland" rice are deceptive, since all rice (*sic*) yields better in very wet soil. The latter is not a matter of general agreement, but Pelzer says:

> The remarkably large number of distinct varieties of cultivated rice . . . may be divided into two main classes: upland, or dry rice, and lowland, or wet rice. The division, based on the two main types of agronomic practice, is not a very sharp one.

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[32] Malaya, Dept. of Agriculture, 1939. [33] Simkins, 1933. [34] Pendleton, 1942.
[35] Jenks, 1905. [36] Linton, 1933. [37] Parry, 1933. [38] *Ibid.*
[39] Grierson, 1926. [40] Ranade, 1927.

[41] Jenkin W. Jones, Principal Agronomist in charge of Rice Investigations, U. S. Dept. of Agriculture, says the following in a letter to the writer:

"It is now generally understood that lowland ('wet') rice is grown on land submerged during a portion of the growing season. The land is submerged either by seasonal rainfall or by artificial irrigation. A large percentage of the world's rice crop—in Asia, Africa, Europe and the Western Hemisphere, is grown in this manner. In much of Asia the lowland (irrigated) rice is transplanted. Some of the lowland acreage also is transplanted in Africa, Europe, and the Western Hemisphere, but in these parts of the world much of it is sown in the same manner as other small grains, and irrigated. Rice grown on land not submerged, for any appreciable period during the growing season, that is, 'mountain,' 'dry,' 'dryland,' and 'hill,' and not provided with levees, dikes or terraced to hold water, now is generally known as upland rice. In my opinion . . . the terms used should be lowland (irrigated) or upland (non-irrigated) rice."

[42] Faulkner, 1933.

Some upland varieties can be grown in flooded fields; however, it is said to be easier to grow dry rices in water than to grow wet rices on dry land.[43]

Wickizer[44] observes that "upland" rice, whatever its variety, is grown without irrigation, i.e., not in surface water; while "lowland" rice of all varieties is grown either under artificial irrigation or in natural swamps where there is standing water at appropriate seasons. Commonly, the varieties grown as "upland" rice are not the same as those grown as "lowland" rice, as they each adapt best to special conditions. A single variety can however often be grown under either system of cultivation.[45]

The kinds of rice set up by the agronomists are thus based upon the plant's adaptations. Hedayetullah[46] and Copeland[47] agree in stressing its tremendous adaptability. The latter emphasizes adaptation to varying amounts of water. He classifies as "upland" rice all varieties which are grown without artificial irrigation, but stipulates a considerable range of water tolerance between "lowland" rices. Wild varieties of rice are bearded, as are some cultivated ones, and these reportedly can stand flooding better and for longer periods of time than non-bearded varieties do. Some "lowland" rices grow even in salty water —these are grown in fields visited by the tides, in India, Siam and Annam. Copeland[48] reiterates Wickizer[49] to the effect that the "upland" and "lowland" varieties are:

> . . . groups not sharply separated in nature, being blended by many varieties which thrive with or without irrigation; but the division is practical by definition and conforms with agronomic practice.[50]

Wild rice, and many cultivated varieties, shed the seed upon maturity.[51]

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[43] Pelzer, 1945, p. 10.

[44] Wickizer and Bennett, 1941.

[45] Jenkin W. Jones states further:

"Lowland (irrigated) rice is more productive than upland (non-irrigated) rice, but land suitable for irrigation plus irrigation water—rainfall and irrigation systems—is limited in all parts of the world. Hence, in regions, particularly in Asia, having relatively high precipitation well distributed during the growing season, upland rice is grown. Upland rice cannot be grown except where the rainfall is rather heavy and well distributed. The varieties grown as upland rice yield more when grown under irrigation, but upland varieties are apparently somewhat more drought-resistant than are lowland varieties. Some lowland varieties, however, have a wide range of adaptation and will yield reasonably well when grown as upland rice."

[46] Hedayetullah, 1946.

[47] Copeland, 1924, p. 125.

[48] Copeland, 1924.

[49] Wickizer and Bennett, 1941.

[50] Copeland, 1924, p. 125.

[51] Jenkin Jones notes that:

"Red rice, a cultivated variety, is also the most serious weed in our Southern States. There is nothing unusual about rice shattering; most wild species have this characteristic."

In this connection, Copeland[52] mentions wild rice as the most annoying weed in Philippine rice fields. M. Mène,[53] writing in regard to introducing "le riz sec de Chine" to the Midi, notes that it can resist violent winds without shedding its grain or collapsing. Further, the harvest need not be on a fixed date, but is amenable to the grower's convenience. Here, Hedayetullah[54] points to the duration of the maturation period as a foremost adaptation of the plant to environment. For the early rices, the date varies with the date of sowing; during their growth temperatures do not drop sharply. The transplanted winter rice, India's main crop, ripens when temperatures begin to drop and, despite variation in sowing dates, it matures on almost a fixed day. For cultivated varieties in general, Copeland[55] gives the range of the growth and maturation period as two[56] to ten months, remarking that it is an important varietal characteristic. He believes that there is probably an inherited ability to develop at a given rate, but since environmental conditions, such as seasonal fluctuations in temperature and precipitation, cause the period of development to vary also, the inherited limits are obscured.

The altitudinal limit of rice planting in the Philippines is 1500 feet; Wickizer[57] gives 7500 feet as the limit for "upland" rice in the tropics. Most varieties require four months of hot weather, at a temperature averaging 22°C., without sharp drops from day to night. "Upland" rice thrives at somewhat lower temperatures, "lowland" rice typically requiring two to three months at a temperature of 20°C. during growth.[58] Rice will not develop normally in shade, and most varieties cannot endure cold nights. "Upland" rice prefers light, loamy soils. Clay soils, which occur widely in the tropics, are well suited to irrigated rice culture, and where a substratum of hardpan occurs, downward seepage is prevented, which may be beneficial provided this is not too near to the surface of the soil. Coraline soils do not hold moisture long enough to raise a crop of "lowland" rice, and the limestones, as in eastern Java, are too porous to permit economical irrigation.

[52] Copeland, 1910.

[53] Mène, 1873.

[54] Hedayetullah, 1946.

[55] Copeland, 1924.

[56] Jenkin Jones comments:

"I have often heard of 60-day rice, but we have had over 8000 varieties of rice from various parts of the world, none of which have matured in 60 days under our conditions. . . . It has been our experience that in Asia at times the word 'plant' is used when 'transplanted' is the term meant; hence, if the rice matures in 60 days from the time it is transplanted, it was 30 to 60 days old when transplanted."

He refers to agricultural experiment stations in the United States, which can nowhere duplicate by any means the climatic, hence growing, conditions in Monsoon Asia.

[57] Wickizer and Bennett, 1941.

[58] Jenkin Jones would extend the estimated growing season of "lowland" rice to from three to six months, from his experience in the United States.

Rice has food preferences. It does not require much nitrogen in order to survive, and it will grow in soils that are deficient in calcium and in phosphates.[59] Wells, Agcaoili and Feliciano[60] concluded that the chemical content of the grain is influenced by climatic conditions during growth; by type of soil, nature of fertilizers, and seasonal variation. Much[61] has been written about the improvement of the nutritional qualities of rice by modifying such factors as are controllable in cultivation. The plant apparently obtains only carbonaceous elements by photosynthesis from air, sunlight and water. Therefore, according to Albrecht,[62] the most important factors contributing to the proteinaceous and mineral content of the grain, and hence to its fertility, are soil composition and fertilizers. Transplanting and irrigation cannot supply elements lacking in the soil, though the algal film may make some oxygen available for irrigated rice.

The botanists have made only a beginning in tracing the origin of the cultivated varieties of rice. All ascribe it to one species—*Oryza sativa* Linnaeus. A few advance a polyphyletic origin. Not many surveys have been made in the Old World homes of wild rice. In the New World, the so-called wild rice gathered for food by some American Indians is not a true rice, but is a wild grass known to botanists as *Zizania aquatica*. Of the botanical investigations, Roschevicz'[63] studies are the most suggestive. Placing the origin of rice cultivation in Asia, he at the same time makes a case for some of the cultivated African rices having originated from wild African species—these akin to *Oryza sativa* L. *f. spontanea*. Further, he believes the latter to be a complex of small independent species. Its center of diversity is very possibly India, where

[59] Jones states as to food preferences of rice:

"Rice can, it is true, be grown on soils that are low in nitrogen, phosphorus, and potash, but the yields are certainly low also. Kelly has shown that with yields of 2400 to 3600 pounds of rice, 40 to 65 pounds of nitrogen, 26 to 41 pounds of phosphorus, and 60 to 113 pounds of potash per acre are removed. These amounts are not available in poor soils, and hence, yields as large as these are not obtained under such conditions. Rice responds to favorable conditions the same as do other crops . . . nitrogen . . . is most extensively applied to rice land where high yields are produced."

[60] Wells, Agcaoili and Feliciano, 1922.

[61] *See*: McCarrison, Robert, "Pathenogenesis of Deficiency Disease. XIV—On the Occurrence of Ophthalmia in Pigeons Fed Exclusively on Parboiled Rice and Its Prevention by the Addition of Soil to the Food," *Indian Journ. Medical Research*, 11 (2): 323–335, 1923; "The Relationship of Rice-beriberi in India," *Indian Med. Research Memoirs*, No. 2, 1924; and "Influence of Irrigation on the Nutritive Value of Rice," *Indian Journ. Med. Research*, 15: 915–920, 1928. Also: *see* Vedder, Edward B., and R. T. Feliciano, "An Investigation to Determine a Satisfactory Standard for Beriberi-Preventing Rices," *Philippine Journ. Science*, 35 (4): 351–389, 1928; Hermano, A. J., "The Nutritive Protein Value of Five Varieties of Rice," *Philippine Journ. Science*, 51: 567–572, 1933; Sreenivasan, A., "Nutritive Value of the Protein and Mineral Constituents of Rice Varieties," *Cereal Chemistry*, 19 (1): 36–47, 1942; Sreenivasan, A., and V. Sadasivan, "Nutritive Value of the Protein and Mineral Constituents of Dry and Wet Rices," *Cereal Chemistry*, 19 (1): 47–55, 1942.

[62] Albrecht, 1944.

[63] Roschevicz, 1931.

he maintains that conditions favor mass mutation, and where he believes that such mutations have been utilized by rice growers since ancient times.[64] At any rate, and most likely in Africa, a number of the cultivated varieties have possibly originated from wild species such as *O. breviligulata*, *O. glaberrima*, and *O. officinalis*, which are related to *O. sativa* L. *f. spontanea*. The small-grained rices "very probably have taken rise from *Oryza minuta* Presl."[65] At least some of the multitudinous cultivated varieties could stem from the hybridization of these species with cultivated rices, the majority of which do owe their origin to *O. sativa* L. *f. spontanea*. The latter is referred to by Roschevicz[66] as a wild species; much of the literature does not specify it as wild, but lumps all cultivated rice as *O. sativa* L. Roschevicz[67] concludes:

The botanic-morphological and the botanic-geographical methods of investigation applied to the material available to us, lead us to the following conclusions: (1) our cultivated rice belongs to section *Sativa* Roschev., having for its center of origin tropical Africa; (2) by far not all the cultivated rices have originated from *Oryza sativa* L. *f. spontanea;* many of them have their origin from species akin to *Oryza sativa* L., as *O. breviligulata* A. Cheval. et Roehr., *O. glaberrima* Stend., *O. minuta* Presl., *O. officinalis* Wall., etc., either by way of being introduced into cultivation along with *O. sativa* L., or by way of hybridization with the latter; (3) the great varietal diversity of cultivated rice in India and Indo-China may be explained not only by the ancientness of rice cultivation in these countries, but also by the fact that wild rice *Oryza sativa* L. *f. spontanea* has found there suitable conditions for the production of a considerable number of mutants (which did not take place in Africa) and that these mutants have been introduced into cultivation.

The Asiatic origin of rice cultivation is equally confirmed by the multifariousness of the varietal material which in China, Indo-China and India, and in general the whole of south-eastern Asia, is immensely rich in varieties and races, while the number of varieties and races known for Africa is inconsiderable . . . that the cultivation of rice as a world crop is due to China or to Indo-China, does not mean that rice did not thrive somewhere in the heart of central Africa, whose ancient history has remained a mystery to us, without having become known to ancient Egypt . . . as we know that rice was cultivated in Africa from the most ancient times, which is confirmed by the

[64] Jenkin Jones says concerning mutations:

"Mutations in rice probably occur much more frequently than was formerly supposed. . . . Most mutations in rice are recessive to normal. . . . on the basis of my observations over the past few years, mutations in rice, at least in this country, occur rather frequently.

"The rate of mutation no doubt depends upon the environment and the varieties of material grown. This also is true with respect to the extent of natural crossing between varieties, which also is more common than was formerly expected. These two factors, mutation and natural crossing, have no doubt been very active in the origin of the numerous varieties of rice present in Asia. . . . I am certain that the plant produces a greater number of varieties under domestication than in the wild."

[65] Roschevicz, p. 123.

[66] *Ibid.*

[67] *Ibid.*, pp. 123 ff.

fact that Africa, as we have seen above, possesses varieties of its own, grown from local wild rices, the question where wild rice was first introduced into cultivation remains unsolved.

Though there are many more recent discussions than that of the Russian botanist, none consulted takes in as wide a range of material with comparable care. It is interesting to note that Roschevicz,[68] at least in the English summary of his text, makes no point of the physiological adaptations that lead agronomists to distinguish "wet" or "lowland," and "dry" or "upland," and deep-water rices. Parnell,[69] with the Indian botanists Ayyangar and Ramiah, remarks the existence of probably several thousand varieties of rice in India, and finds that the characteristics in which they differ are extremely varied, some being morphological and others physiological. Cross-fertilization would account for some of this great number of varieties. Burkhill is cited by Pelzer[70] as giving a polyphyletic origin for cultivated rice; *O. fatua* Koen. and *O. minuta* Presl. probably ancestors of *O. sativa* L.

Disregarding its botanical identity, the literature persists in classifying rice according to the methods employed in its cultivation. As to the "dry" or "upland" rice, the wide practice of shifting cultivation in conjunction with the cutting and burning of forest jungle or brush previous to cultivation may have helped to obscure the variant methods employed. This general practice, under such blanket designations as "jhum" (India), or "the milpa system" (Middle America), is used and abused in regard to its own variations, as well as in loose descriptions of the methods of rice cultivation. In Korea, where the technique has great antiquity, the Chinese refer to it as "fire field" agriculture. Common in southeast Asia, its historical connection with the development of rice cultivation has interested others than anthropologists. Pelzer[71] treats it elaborately, and semi-popular works like Bruno Lasker's[72] make the anthropologist desire a more careful understanding of the whole problem. Here, shifting cultivation is pertinent only insofar as it is one of the techniques employed in rice cultivation.

Chinese methods of rice cultivation were first widely discussed by French agronomists, whose practical interests led them there a hundred years ago. They also used the terms "wet" and "dry" rice. They were interested in introducing new varieties into the Midi, and for over forty years the Bulletin de la Société Zoologique d'Acclimatisation buzzed with discussions of "le riz sec de Chine." Notable among these is the account by E. H. de Méritens,[73] who

[68] Roschevicz, 1931.
[69] Parnell, Ayyangar, and Ramiah, 1917–1922.
[70] Pelzer, 1945.
[71] *Ibid.*
[72] Lasker, 1944.
[73] De Méritens, 1855.

translated sections of a Chinese encyclopedia of agriculture, the Shou-shih T'ung-Kao, a work completed in 1742, and based on the H'su-Kuang-chi, which was compiled from original manuscripts and edited by one Ch'ên Tzu-lŭng, on imperial orders. M. de Méritens,[74] writing in 1855, credits Leon d'Hervey Saint-Denys with the first interest in "le riz sec" among his countrymen. Baron d'Hervey Saint-Denys, in 1850, published "Recherches sur l'agriculture et l'horticulture des Chinois." As early as 1842, however, S. Julien[75] in a communication addressed to l'Académie des Sciences described "le riz que se culture à sec dans la Mongolie," and referred to the same Chinese source used by de Méritens.[76] The Shou-shih T'ung-Kao gives a classification based not only on methods of cultivation, but on the period required for the maturation of rice varieties. It accounts for two main groups of rice cultivated in China besides "le riz aquatique."

TABLE I. CHINESE VARIETIES, ACCORDING TO THE SHOU-SHIH T'UNG-KAO

Variety	*Date Sown*	*Date Harvested*
I. Sien-tao, or early rice, including:		
1. Lou-che-ji-tao, or 60-day rice[77]	April 5	June 5
2. Pe-ji-tao, or 100-day rice	April 5	July 5
3. Ta-sien, a large-grained variety	May 5	Early September
4. Siao-sien, a small-grained variety	April 5	August 5
II. Kang-tao, or late rice, including:		
1. Hanno		
2. A two-crop variety:—		
Crop one	March 21 to April 5	Summer
Crop two	Fall	Winter

Besides Sien-tao and Kang-tao, there is Ho-tao, or "riz de feu," suggestive of the "fire fields," but according to the source it was so called in China from its origin in the southwestern mountains, where the climate is hot and where rice is grown under difficult conditions from a Chinese standpoint. Suggestively again, fire fields are found today in the southwest. Ho-tao is transplanted in

[74] *Ibid.*

[75] Julien, 1842.

[76] De Méritens, 1855.

[77] Jenkin Jones comments here: "Unless it refers to a period from the time of transplanting, it is probably like our Sixty-day or Kherson oats which mature in 90 to 100 days. . . . In this connection, too, some of the authors quoted may refer to Rattoon crops of rice, that is, a second crop from one planting as the result of tillering under favorable conditions following the harvest of the first crop. Rice of this nature can mature in 60 days."

China now, but in olden times this was not done. It includes varieties that vary in shape, color and size of grain, and in consistency. Some varieties are fragrant. In Fukien, a plant known as "riz de Cochinchine" is cultivated on the uplands; this Julien[78] considers the best of all of "le riz sec." For one variety he gives the period of growth and maturation as 50 days, others maturing in 60, 80, and 100 days, in the main being harvested in August and September. This corresponds with the time given for Sien-tao. Julien[79] describes another "dry" rice from Jehol, a sample of which he sent to Paris, informing l'Académie des Sciences that it requires neither natural nor artificial irrigation.

The Shou-shih T'ung-kao, and a Chinese agriculturist of note, one Si-Hien-Tchong, relate how the Emperor Chin-Tsoung (A.D. 996–1021), to alleviate famine in eastern and western Chekiang, ordered the purchase of 30,000 bushels of drought-resisting rice from Fukien, distributing it to the poor people to plant under the instruction of his inspector of transport for grains. Again in the Sung Dynasty, Kiang-Ngao, a subprefect in Jouou-Tcheou, sent to his native Kien-ngan for drought-resisting rice to relieve famines, and thus introduced it to the uplands of the north Chinese valleys. This rice was found to yield abundantly, by local standards at the time. According to the encyclopedia both Sien-tao and Kang-tao were introduced from Cochinchina. The two groups differ in certain physical properties: Sien-tao is the smaller, brighter grained, and is nonglutinous. Kang-tao is sometimes bearded, includes glutinous varieties, and is found in many colors of awn, while Sien-tao is either red or white.[80]

The Chinese method of cultivation for "dry" rice, as given in the source, is different from that used for the "wet" rice. For "dry" rice the nurseries are tilled once in preparation for the seed, which previous to sowing is soaked for one night in water to hasten germination. Seed is not sown broadcast, but in small holes, a few grains to each; wet ashes, the product of burned plants or rice straw, are spread over the whole area sown; the nurseries are weeded three times, and subsequent to each weeding liquid manure is scattered on them. By this time the blade is above ground, and grows with great strength and rapidity. "Le riz sec" is said to thrive equally well on the plains or in the mountains. De Méritens[81] gives another method for its cultivation. Before sowing, the soil is moistened and manured thickly, sometimes with oil cakes, sometimes with

[78] Julien, 1842.

[79] *Ibid.*

[80] Jenkin Jones states in regard to this: "There are two kinds of rice based upon the nature of the endosperm—nonglutinous, which is grown most extensively, and glutinous (waxy). Both may be bearded or beardless, early or late, of poor or good quality, and have red, purple, brown or white bran coats. Kang-tao apparently was a mixture of nonglutinous and glutinous types similar in appearance and color, for rice, like other plants, does not change from one form to another except through hybridization and mutation."

[81] De Méritens, 1855.

leaves and the bark of trees, in addition to animal manures. For the preparation of hard soils brushwood may be gathered and burned, and then plowed under. The rice is transplanted when it is about 20 cm. high. The fields in which it is set out must not be inundated, nor too dry. For "le riz sec," as for "le riz aquatique," the soil is usually prepared in spring. M. de Méritens[82] notes the greater labor involved in transplanting the latter. He draws on d'Hervey Saint-Denys for his information here. The main fields, after tilling, are flooded to receive the transplanted seedlings. First the laborer and his oxen tread the submerged mud, puddling it to a depth of 15 to 20 cm. The plow is not used in this process. The field is then harrowed to level it, and flooded again. The rice is then transplanted from the nurseries to the inundated fields, its roots immediately covered with mud by the action of the water. The roots are planted in holes prepared after the field is flooded, and just when the plants are being set out in rows. It goes without saying that transplanting to unsubmerged fields is less work.

In contemporary accounts there is unanimity on the fact that most Chinese rice is transplanted,[83] but there is less detail as to varieties. Wagner[84] gives "den gewöhnliche Wasserreis," "den sogenanten Bergreis," and "den Klebreis" (glutinous), but fails to distinguish methods of cultivation. His "mountain" rice ripens in four months, and his "water" rice (irrigated) subdivides into early, medium and late varieties. John L. Buck[85] describing land utilization in China, gives regional differences in agricultural techniques. In the Yangtze region, the slopes are terraced above the flood plains. In the southwest, terraced fields occupy fifteen per cent of the area cultivated, and some of the Lolos and Miao grow rice on terraced land. Szechwan is a frostless area where a spring crop is grown in addition to the main one, and is the only part of China where the soil is rich enough not to need fertilizers, although they are used to some extent. In what Buck[86] designates as the "rice-tea" area, much of which is hilly, the bottom lands are planted in rice. R. H. Tawney[87] remarks the use of "water farming" in the Yangtze region, and in the south, where double cropping of rice is a regular practice, together with more intensive cultivation. George Cressey,[88] like Buck,[89] divides China into agricultural regions. He blames the poor soil and the limited supply of water for the scanty planting

[82] *Ibid.*

[83] *See*: Martin Yang, 1945, *A Chinese Village. Taitou, Shantung Province*, pp. 22–23. The rice is sown in small holes, after plowing; it is not transplanted or irrigated; in a considerable area around Taitou no rice is grown. Fertilizers are employed, including ashes mixed with dung.

[84] Wagner, 1926.

[85] Buck, 1937.

[86] *Ibid.*

[87] Tawney, 1932.

[88] Cressey, 1934.

[89] Buck, 1937.

of rice in northern China, stating that it can be grown as far north as Vladivostok. He summarizes:

> The most conspicuous boundary is the northern limit of continuous rice cultivation, with its flooded fields, canals and water buffalo, near latitude 33° North . . . this line lies midway between the Yangtze and Hwang rivers along the crest of the Tsingling in the west and near the Hwai River in the east. South China is a green, humid, subtropical riceland, while the north is a dry brown wheatland under the influence of the desert . . . Major contrasts appear between the wheat and rice provinces . . . .The growing season in north China is five to eight months, while in south China it is ten months to a year, so that double cropping is more widespread and the same land can support more people. Rainfall is over twice as heavy in the south. The gross area of the south is larger but the presence of extensive plains in the north gives it a greater cultivated area. Nevertheless, the higher productivity of the rice lands enables them to support nearly twice the total population of the wheat-producing section.[90]

The Yangtze Valley is subject to the hazards of over-flooding and droughts, but the rice crop usually stands to benefit by the three-month flood period. This region yields one rice crop annually.[91] Terraces occupy the south Yangtze hills. Two, and sometimes three crops of rice per year are grown in southern China, where the yield per acre is second—in Asia—only to that of Japan, and is three times that of all India or Java. The lower and central Yangtze and the western and southern area of China lead in rice production. In the Canton delta the first crop is set out in March and harvested in July; a second crop is then transplanted to the main fields to be harvested in November. In eastern Chekiang an early crop is harvested in July, a late crop in October. Terraced lands are cultivated mainly in Szechwan, especially on the slopes of its Red Basin. Agriculture is most intensive in southern China, where the double cropping of rice is the regular practice. On the southwest tableland, rice is the dominant summer crop; it is often dependent entirely on rain for its water supply, excepting in the mile-high plateau, where flooded fields prevail. A description of Yunnan, edited by H. T. Fei,[92] notes that the southwest tableland and the valleys are diverse in both crops and population; here begins the altitudinal stratification of peoples and cultures that is so very characteristic of Farther India. The Lolos adhere to maize as their staple, growing some rice on terraced land. The Chinese immigrants grow mostly rice. They prepare the land in April, and bring off the crop in autumn.

[90] Cressey, 1944, pp. 91–93.

[91] Jenkin Jones notes: "In much of the Yangtze Valley and from Central Japan to the southern part only one rice crop is grown a year but the land is double cropped, wheat, barley and vegetables often being the second crop. In this connection, N. Jasny, in his *Competition among Grains*, Stanford University, 1940, p. 7, explains: 'Where the cool season is too cold and/or too dry for rice, fall-sown wheat or barley is frequently rotated with it on the same land and in the same crop year'."

[92] Institute of Pacific Relations, 1943.

These few surveys are fairly compatible with that of the Shou-shih T'ung-Kao. The practical universality of transplanting in China is worthy of a remark. It has been demonstrated by agronomists that transplanting increases the yield per plant and per acre.[93] The seedling develops new grain-bearing tillers when it is transplanted, so that even double transplanting[94] has been found rewarding.[95] It economizes seed: in China one acre of nursery seedlings plants from ten to twenty-five acres of rice; and it permits double cropping, the second rice crop getting its start in the nursery while the first crop of rice, or in some cases another plant, as wheat or barley, matures in the field.[96] Transplanting can mitigate the dangers of drought and flood in the main fields by delay until favorable conditions return. In India and in the Philippines the rice transplanted is sometimes raised in a dry-farmed nursery.

Tanaka and Yekoussima,[97] writing in 1867, describe "dry" rice grown in Japan. The plant needs a certain amount of water, but it is not grown on flooded fields. In Jeddo (Yeddo) it is planted in March and harvested in October or November, at the same time when the irrigated rice is taken off.

[93] Jenkin Jones interpolates here: "This is true in some tests, not so in others. Transplanting does save seed, irrigation water, makes the crop easier to fertilize and weed, and to double crop. These and not increased yields account for the practice in Central Japan and the Yangtze Valley."

[94] Hedayetullah, 1943.

[95] Jones says, to the contrary: "Tillering is associated with the variety, the conditions under which the rice is grown, spacing, number of plants per hole, climatic conditions and other factors, and if rice is transplanted rather close together you get essentially the same amount of tillering as if you had sown directly at the same spacing. That transplanting does not necessarily result in high yields is evident from the fact that much of the rice crop is transplanted in the Philippine Islands, Indo-China, Siam, Burma, and India, but the average yields in these countries are relatively low, ranging from 22 to 36 bushels per acre in the pre-war period; whereas, in California, Italy, Egypt, Spain, yields often range from 60 to 75 or 80 bushels per acre without transplanting."

[96] F. H. King, *Farmers of Forty Centuries*, Madison, Wis., 1911, includes increased yields in the benefits due to transplanting, to wit, p. 284: "Extensive as is the acreage of irrigated rice in China, Korea and Japan, nearly every spear is transplanted; the largest and best crop possible, rather than the least labor and trouble, as is so often the case with us, determining their methods and practices." *Ibid.*, pp. 288–289: "More than a month is saved for maturing and harvesting winter and early spring crops, or in fitting the fields for rice, by this planting in nursery beds. The irrigation period for most of the land is cut short a like amount, saving in both water and time. It is cheaper and easier to highly fertilize and prepare a small area for the nursery, while at the same time much stronger and more uniform plants are secured than would be possible by sowing in the field. The labor of weeding and caring for the plants in the nursery is far less than would be required in the field. It would be practically impossible to fit the entire rice areas as early in the season as the nursery beds are fitted, for the green manure is not yet grown and time is required for composting and for decaying, if plowed under directly. The rice plants in the nursery are carried to a stage where they are strong feeders and when set into the newly prepared, fertilized clean soil of the field they are ready to feed strongly, under these most favorable conditions. Both time and strength of plant are thus gained . . . the best possible practices under their condition of small holdings and dense population."

[97] Tanaka and Yekoussima, 1867.

Remote from the main rice fields, it is grown on hill slopes where, when the summer is very hot, the Japanese have means to irrigate it. Before it is planted the ground is enriched with night soil. The seed is prepared by soaking for three days in water and then exposing to the sun. When sown it is mixed with ash and powdered fish refuse and scattered in furrows. It is subsequently weeded and cultivated. Transplanting is not mentioned in connection with this crop.

R. B. Hall[98] assigns only local importance to "upland" rice in Japan, where it now occupies in all 206,500 cho. In order of importance, the main producing areas are: the diluvial terraces of Kwanto, the dry central part of the Taiwan plain, and the ash plateau of southern Kyushu. A little is grown in Ou, the northernmost district of Old Japan, where the growing season is short and the climate relatively cold. The diluvial terraces of Kwanto have a " . . . cool, moist sprouting season and . . . a hot, dry ripening period."[99] In Hokkaido the growing season is short, "upland" rice is not cultivated, but quick-maturing "lowland" varieties have been established. Rice cultivation is only a recent development on the island, and the northern limit is set by a 90-day growing season. No altitudinal limit is mentioned for the Japanese islands. In Tokai, the East Sea district, there is " . . . irrigated rice on the delta plains and specialized dry land production on the terraces. . . . "[100] A variety known as "Izumo" is grown in San-in and along the Sea of Japan coast, a relatively cool region with a short growing season, where there is little level or arable land; we are left in doubt as to whether this is an "upland" variety of rice. Double cropping of rice, wheat, barley, and other crops is practiced in northern Kyushu (Kita), in southern Taiwan, and in the Nanki, Setouchi, and Tokai districts of Old Japan. The Hokuroku district, situated in the west central plains south of Ou, embraces " . . . the most specialized paddy areas in Japan."[101] The Kwanto plain produces almost as much "paddy" as Hokuroku and more than half of the "upland" rice crop of Japan. In the Imperial district of Kinai, the " . . . alluvial basin floors constitute vast paddy fields, and the average yield is the highest in Japan."[102] In Kinai a few terraces are cultivated.

In Korea, half the rice grown is dependent on rain for its water supply. In the north the growing season lasts only 100 days, the terrain is rugged, and "lowland" rice occupies a little over one tenth of the farm land. The northeastern people, who are shifting cultivators, grow no rice at all, while in the northwestern section there is " . . . a relatively important production of 'dry'

[98] Hall, 1934, 1935.
[99] *Idem*, 1935, p. 133.
[100] *Idem*, 1934, p. 339.
[101] *Ibid.*, p. 327.
[102] *Ibid.*, p. 336.

rice."[103] As in his description of Japan, Hall[104] omits any mention of transplanting, though double cropping may be taken to infer it. He takes the southern boundary of central Korea as the line separating modernized (Japanese) rice cultivation and double cropping from simpler methods employed with single cropping in the north. In southern Korea the growing season lasts 150 days, and a higher proportion of rice fields is irrigated than elsewhere.

The Malay Peninsula presents a wide variety of agricultural methods. Here the "wet" system obtains for ninety per cent of the rice fields:

> But there are variations of both these main systems to suit local conditions: wet systems involving considerable preliminary cultivation as opposed to systems where cultivation is practically impossible owing to the soft nature of the land; dry systems which include both ploughing and raking, and a dry system which merely entails the clearing and burning the jungle in preparation for the crop.
>
> In the cultivation of "wet" padi the general procedure (of course with local variants) is to plough or dig the land once or twice, and rake or smooth it with a roller. The seed is planted in a nursery and is ready for transplanting in the field after 40 days. The seedlings are planted three or more per hill, about one foot apart. After cultivation consists of weeding.
>
> In dry padi cultivation the land is sometimes ploughed twice, raked and the seed sown by hand or drilled; or seed planted in clumps about a foot apart, or in hill cultivation, virgin land is cleared, burned, and the seed broadcast.
>
> Generally speaking, manuring is not a common practice in padi cultivation. In Kedah and Perlis, where bat guano is easily procured, the land is periodically manured. In Kelantan a system exists in which each plant, after transplanting, receives a small application of burnt mixture of cowdung and earth, coconut and arecanut leaves. In parts of Perak and in Province Wellesley and Malacca, the seedlings are steeped in a mixture of mud, phosphate and ashes immediately after removal from the nursery.[105]

In the Krian district of the Malay Peninsula, a floating seedbed is used. Weeds are cut, plastered together with clay, and piled in a long strip, to float as a platform on the surface of a flooded field, the top staying two inches above the water level. A thin layer of mud is applied to sow the seed in. The plot rises and falls with the water in the field, keeping the seedlings above water while their roots develop in the submerged layers. The seed is germinated prior to sowing by three days' soaking in water, and two more days in a moist condition. The germinated seed is broadcast on the nursery and a layer of leaves is put over it for ten days to protect it from the sun and from birds. In two weeks the plants are six to eight inches high. A similar nursery is used on the west coast of India. In the Malay Peninsula, the plants are set out first in clumps of 150 to 200, and partially submerged. At the second transplanting, ten days later, these clumps are broken into smaller ones that are placed in rows. Forty

[103] *Idem.*, 1935, p. 48.
[104] *Ibid.*
[105] Malaya, Dept. of Agriculture, 1939, p. 42.

days later, at the third and final transplanting, the tops of the seedlings are cut back, and the roots are pruned and dibbled in. Two or three weedings take place after this. As soon as the plants flower, the water is gradually drained off the fields, to be gone when the grain has set and is ripening. The varieties that are planted in the best soil, in June, ripen in the short dry season early in the year, about February. The period of growth for irrigated rice may be said in general to last from seven to eight months.

In the district of Kelantan, "dry-land" nurseries are used for "wet padi." The site is plowed and harrowed twice, the seed broadcast thinly and harrowed in. Usually the single transplanting takes place forty days later, though adverse weather conditions may delay it as much as three months. The main fields cannot be cultivated until the July rains soften the soil. Preparation of the land and planting proceed from then until November, the low-lying areas being completed first, followed by the higher and drier areas. Plowing is not possible in all types of Kelantan soil. The transplanted rice crop is drained if there is an excess of rain. The crop is not weeded, but is manured as described above. In this district:

> Two distinct types of padi are cultivated, namely wet padi or padi chedongan, and dry padi, padi tugalan. This dry padi must not be confused with the dry or hill padi, padi huma, found in various parts of Malaya, as the methods of cultivation are distinct.[106]

Further:

> The land planted with dry padi falls into two groups, that habitually under the dry crop and that which may be utilized for either the wet or dry type. The latter forms but a small proportion of the whole and comprises the lower lying dry padi, or tugalan lands, the choice of wet or dry padi for any particular year usually depending on the inclination of the cultivator. Generally speaking, the fields are flat or slightly sloping and in the latter case wet padi is found at the bottom of the slope, dry padi land over the main area and the intermediate or alternating type mentioned above in a narrow strip between the two. . . .
>
> The soil throughout the dry padi lands is markedly homogeneous and . . . a heavy loam predominates.
>
> In view of the localized nature of the crop it is not surprising to find that there are only some twelve distinct varieties cultivated. The maturation periods of these varieties vary from 173 to 197 days and, though the majority can only be used as dry padi, there are some which can also be successfully planted on wet land.
>
> The success or otherwise of the dry padi crop is dependent on a favorable monsoon. Dry padi calls for an amount of labor and care which is greatly in excess of that required to produce a crop of the wet type.[107]

In Kelantan the dry season lasts from the middle of February until the end of May. After the early showers in July and August, the "dry padi" land

[106] *Ibid.*, pp. 48, 49.
[107] *Ibid.*

is plowed and harrowed four times, and the seed dibbled in lines, before the monsoon rains come. Land must not be plowed or weeded when too wet, since packing or puddling this soil injures the plants.

A simpler method, like the one called "padi huma" in Trengganu, is used in farming "dry-land" rice in Province Wellesley North. It consists in cutting and burning the standing vegetation, followed sometimes by a light hand-digging after the April rains; the seed is dibbled into holes and covered, with no subsequent care. In Trengganu, four types of rice are distinguished locally:

(1) Padi chedongan—"wet," transplanted rice.
(2) Padi taboran—rice broadcast on non-irrigated land.
(3) Padi tugalan—rice dibbled into dry land.
(4) Padi huma—rice dibbled in on burned off jungle land which is left to revert to jungle after one season's use.

The first is dependent chiefly on rain for irrigation. Type 3 is on the lines of the Kelantan "dry padi," described above. Type 2 is planted either because the owner knows no alternative method of cultivation, or because he has too much land to care for by the superior tugal method. Type 2 fields are plowed and harrowed three times; the seed is broadcast and covered with a harrow instead of dibbled in, and the crop is subsequently untended until harvest. The land is used and fallowed rotationally for type 2. Type 4 represents what some writers distinguish as true shifting cultivation: the fields are not re-used, new jungle being cleared and prepared annually.

In the Pahang district, after two or three crops of "dry padi," newly reclaimed land is often planted permanently with crops other than rice. Methods here are " . . . the most primitive of any of the four Federated Malay States." "Wet padi" is sown in nurseries in February and March, harvested in December and January. Planting periods vary with local seasonal differences. Pahang crops do not depend completely on rain water. Nurseries:

> . . . for any types of "wet" cultivation are usually situated, on dry land . . . Secondary jungle is usually selected, felled and burnt shortly before sowing the seed. A few larger trees are usually left to afford light shade. The seed, previously soaked in water, is broadcast after the soil has been lightly cultivated, the area than raked to bury the seed. A small amount of weeding is done later if necessary and in the event of dry weather the beds may be watered. . . . The seedlings remain in the nursery for six to seven weeks, or much longer if weather is unsuitable for transplanting.[108]

"Wet padi" land in Pahang is locally differentiated as: (1) Paya, or natural swamp, subdivided into that which is at least partially fed by a stream, and that fed by rains alone; (2) Paya sawah, or artificially irrigated, often flat land, not always swampy; it may include terraced land, and most of it is provided with some form of water supply. Three methods are given for cultivating these two types of "wet padi" land. One involves transplanting, and is like Type 1

[108] *Ibid.*, p. 56.

above in Trengganu. The standing grass is cut and left to rot. The soil may be worked by hand, or plowed. Sometimes " . . . buffaloes are employed to trample the grass on the paya and puddle the soil."[109] A second method includes presoaking the seed for two nights. The land is prepared as above, and the seed broadcast. A third method is attributed to the Sakai, many of whom live upstream on the main rivers. Virgin or secondary jungle is cut and burned in the dry season, the land then cultivated for two or three years successively. The moist seed is sown broadcast on the semi-wet swamp land (paya), after the rains begin. Crops receive no further care.

In areas marginal to mainland Asia, the evidence is that practice runs as wide a gamut as in the Malay Peninsula. For Madagascar we have Linton's[110] account. Mainland Africa, though having both "wet" and "dry" farming of rice, is not considered here. Going from Madagascar to the Philippines,[111] the Indonesians are found farming rice by both the "wet" and "dry" systems. The Philippines, best known for their elaborate terraced areas, include tribes that farm dry only with shifting cultivation, tribes that use both this and terracing with irrigation, and tribes that irrigate without terraces. In Java[112] and in Madura "upland" rice is grown on non-irrigated terraced land, besides the "wet" rice of the terraced and dyked flat lands. Shifting cultivation and dry farming obtain in the Lesser Soendas. Celebes farms rice by both irrigated and non-irrigated methods. So does Borneo:[113] the Dusuns and Muruts irrigate, the Dyaks elsewhere usually plant with the seasonal rhythms of the monsoons and rely on rain water.

Farther India presents varied environmental conditions; thus it is not surprising to find Estèbe[114] describing for Tonkin, Annam, Cambodia and Cochinchina these diverse groups of rice:

TABLE II. FARTHER INDIAN VARIETIES, AFTER ESTÈBE

Variety and Method of Cultivation	*Date Sown*	*Date Harvested*
1. Early rice. Transplanted once, in July, it matures in four to five months. It is cultivated on small fields for home use. It is hard to harvest because the rains come when it is ripe.	April	October

[109] *Ibid.*, p. 57.

[110] Linton, 1933.

[111] *See:* Barton, 1930; Christie, 1909; Cole, 1922; Garvan, 1941; Jenks, 1905; Pendleton, 1942; and Pelzer, 1945.

[112] *See:* Cole, 1945; Koch, 1930; Pelzer, 1945; Van Eerde, 1937; Van Valkenburg, 1935; and Wickizer and Bennett, 1941.

[113] *See:* Elshout, 1926; Hose and McDougall, 1912; and Rutter, 1929.

[114] Estèbe, 1934.

2. Midseason rice ("Riz de demisaison"). It takes six months to mature. Grown on high and intermediate fields—high ones depend on rains. Highland varieties are grown much in north and east of Cochinchina, and on high fields in Cambodia during the rainy season.	June to July	December to January
3. Main crop ("Riz de saison"). Some varieties are transplanted once, some twice. It takes seven to eight months to mature. Grown on flooded and the richest alluvial soils; main crop on low fields of deltas and coast—some varieties are salt-tolerant, tides visit twice a day. Some 700 varieties grown in Indochina. Manures are much used. Rain-fed varieties are grown on high fields.	June to July	January to February
4. Twice-transplanted rice. Matures in nine months. Transplanted first in August, and again in October–November.	June to July	February to March
5. Floating rice.[115] Not transplanted. Grown in lake and delta regions, especially in Cambodia and Cochinchina. The seed is broadcast before the rains, the field cultivated once. Keeps on growing after floods, in depths *c.* three meters. When floods subside, the plants collapse, develop new roots and raise themselves, then flower and mature rapidly.	End of April	December to January
6. Post-flood rice. A secondary crop. Transplanted from highland nurseries to the banks of streams after the floods subside. Flowers in February–March, then matures rapidly. Sown on less productive lands after their main crop is off. It is being replaced with floating rice.	October to November	March to April
7. Two-crop rice:		
Crop one	May	October
Crop two	End of June	—
Crop two is transplanted in October to fields just harvested. Two-crop varieties are rare; they are grown in the Tonkin delta, and in Annam and Cochinchina. Some, on the coast, are salt-resistant.		

[115] Jenkin W. Jones comments: "Some varieties or types of rice are restricted to certain areas, including the so-called 'floating rice,' because of environmental conditions. The outstanding characteristic of floating rices is that they are able to grow rapidly as the water level rises, and hence, to survive. As a group, floating rices are relatively unimportant except in limited areas where, owing to floods, the usual types cannot be grown."

Most of the rice is intermediate in its water requirement between the floating rice and the "riz de terrains sec," but does require a plentiful supply. Here, as in China, there are some varieties said to be of Siamese origin. Double cropping is rare in Cochinchina.

Estèbe[116] notes that "upland" varieties are grown to a great extent in northern and eastern Cochinchina, in the Mekong region, and in Cambodia on the high fields. In the Mekonga delta and elsewhere, such fields are dependent on rain for water supply, and it is sometimes retained in ditches in the Mekong region. These remarks are interesting in view of the Chinese account of rice introduced from Cochinchina. Chevey[117] gives an interesting account of the floods of the Tonle Sap, where floating, or deep-water, rice flourishes.

Van Valkenburg's[118] classification of rice in Farther India supplements Estèbe's,[119] but does not conflict. His includes: For Cambodia and Cochinchina, a floating rice (sometimes transplanted before the floods), and a dry season or post-flood rice; on the coasts of Annam, an "eighth month" rice and a "tenth month" rice; for the Tonkin delta, in addition to the two last named, a "twelfth month" rice, which includes "lowland" and "upland" varieties, and a "fifth month" rice, including the same, and also a two-crop rice. He allots the irrigated rices of Annam to the coastal plains and fertile valleys, the Tai in the upland valleys raising it also. Pierre Gourou's[120] survey of the Tonkin delta gives a "fifth month" rice, covered by deep water in summer, grown on the lowest lands, including salt-tolerant varieties, and harvested in June. He parallels Van Valkenburg[121] with an "eight month" rice that is harvested in September, and a ubiquitous "tenth month" rice, harvested in November. He mentions a "dry" rice harvested in September along with the "eighth month" rice. In the Tonkin delta, the two-crop rice is the most extensively cultivated. The second crop, in the nurseries during September, is weeded and irrigated while the first crop flowers and matures in the fields. There is also a "rice of three moons," that is reaped in August. The "fifth month," "tenth month," and two-crop rice are all intensively cultivated and grown in irrigated fields where the soil is periodically aerated and kept thoroughly manured.

Among the Karen[122] of Burma, the hill people plant, cut, and burn the upland fields; the lowlanders plow, harrow, puddle with buffalo, and plant nurseries, transplanting to flooded fields. Credner[123] makes a contrast in the methods of the Tai, who live where irrigation is possible, and those of their neighbors in the hills—Lolo, Lissu and Minchia, whose agriculture is "many-sided." Maître[124] mentions "les hommes des rizieres," or of the "wet" rice fields, among the Moi; J. H. Hoffet[125] lists tribes of Moi who plant "rizieres" and those who plant "rai," or fired upland fields. Charles Robequain,[126] men-

[116] Estèbe, 1934. [117] Chevey, 1934. [118] Van Valkenburg, 1933.
[119] Estèbe, 1934. [120] Gourou, 1936. [121] Van Valkenburg, 1933.
[122] Marshall, 1922, pp. 67, 88, and pl. opp. p. 82. [123] Credner, 1935.
[124] Maître, 1922. [125] Hoffett, 1933, pp. 8–29. [126] Robequain, 1939, p. 74.

tioning unspecified back-country tribes in Indochina, makes the same distinction. Paul Palté[127] says that the hinterland Moi lack "les rizieres Annamites." Virginia Thompson[128] differentiates between the main crop and the fast-growing rice varieties in Siam. Zimmerman[129] details the local differences in practice among the Tai, and mentions several rices that mature in three, four, and five months in northeastern Siam, while in the south a few people grow "upland padi," but most rice is transplanted. Double cropping is rare here, and so are the refinements of southern Chinese rice culture, especially manuring.

In Assam, as wide a variation of practices exists as we noted for the Malay Peninsula. One nucleus of such variations clusters around a general pattern of shifting upland cultivation, here including terracing, and excluding the use of buffaloes and the plow. The wide altitudinal range of climate puts emphasis on suitability of the varieties planted to the particular locale. The Angami Nagas exemplify this situation. To cite Hutton:[130]

> The rice grown in wet fields is of several varieties, some sorts being suitable to low and hot situations, and others doing better in cold and high fields. The varieties differ also in the time taken to mature.

His "wet" rice refers to artificial irrigation. Though he lists native-named varieties, Hutton[131] employs "dry" and "wet," as:

> In some villages . . . terraces built for jhum . . . [are] almost as elaborate as those made for wet cultivation.

"Jhum" refers to the fire fields. The dry-farmed (non-irrigated) land gets good care. Seven of the native-named varieties are dry farmed, though one of these is grown also on irrigated terraced land. Mills,[132] in describing the Lhota, enumerates twelve native-named varieties of rice. In the Konyak villages, according to Fürer-Haimendorf,[133] the fields are non-irrigated; he makes no mention of rice varieties. Leaving the Nagas, we find the Lakher sowing their lightly hoed fields in April, the seed left exposed for rain to cover. They weed two or three times, and begin their harvest in October, pulling up the whole plants! Parry[134] gives fourteen native-named varieties with soil preferences, some maturing as late as December and January.

Cultivation in India may be equally diversified, but the material is more difficult of access. For Bengal, Hedayetullah[135] gives a five-fold classification, based upon methods of cultivation and season of growth. Thousands of varieties fall within these well-marked agricultural groups, which include some that are indistinguishable morphologically, but are physiologically distinct.

Sarat Chandra Roy[136] gives a good account of cultivation for the Orāons of Chota Nagpur. Other reports may be given: Grigson[137] describes the Maria

[127] Palté, 1906, p. 220. [128] Thompson, 1941, pp. 354–357. [129] Zimmerman, 1931.
[130] Hutton, 1921, p. 76. [131] *Ibid.* [132] Mills, 1922. [133] Fürer-Haimendorf, 1939.
[134] Parry, 1932. [135] Hedayetullah, 1946. [136] Roy, 1915. [137] Grigson, 1938.

TABLE III. BENGAL VARIETIES, AFTER HEDAYETULLAH

Variety and Method of Cultivation	*Date Sown*	*Date Harvested*
1. Early rice. Not transplanted. Grown on the highlands. Sown broadcast. Dependent on rain for water supply, and not ordinarily grown in flooded fields.	April to May	July to September
2. Winter rice. Transplanted into flooded fields in July and August. This constitutes the main crop.	June to July	October
3. Lowland rice. Not transplanted. Grown on low bhil lands. Sown before the heavy rains. Harvested in standing water, it grows in depths to six feet.	February to March	July to August
4. Floating rice. Not transplanted. Grown on the lowest floodlands. Sown broadcast before the rains. Collapses and reroots when the floods recede (as described by Estèbe in Farther India). Grows in depths to thirty feet, keeping the top above water.	February to March	November to July
5. Post-flood, or spring rice. Sown in nurseries and transplanted to river banks when the floods subside, or to lowlands that retain moisture throughout the winter. Sometimes irrigated.	October	March to April

Gonds of Bastar cultivating "light mountain rice," which produces three crops: early, main, and late. Some Marias are shifting cultivators, some have the beginnings of permanent cultivation with irrigation. The Hos in Kolhan[138] plow and transplant; when the land is hilly, they sometimes terrace it. Elwin[139] gives the Baiga sowing "upland" rice on fire fields, with hand tillage and water supplied by rains. Grierson[140] reports 60-day rice in Bihar, which is rain fed; other kinds are transplanted here, once or twice; these varieties mature at different periods from July through December. In the Konkan, on the west coast of India, Ranade[141] reports painstaking farming from the village of Roth Khurd. This is a fertile region where rain is abundant. Most of the rice grown here belongs to early varieties that are sown in May, after the rains set in, and are harvested in October. This rice is locally called "halvi." All of the fields depend on the monsoon rains for their water supply. The rice is transplanted. Nurseries are tilled by hand, and elaborately fertilized, first with a dressing of

[138] Majumdar, 1937. [139] Elwin, 1939. [140] Grierson, 1926. [141] Ranade, 1927.

dung which is covered with grass and branches, then with fine dust, and on top of this with liquid manure. This preparation is made to ensure slow combustion. Then the whole field is fired in April or May, and is ready for sowing. The nursery is hastily plowed before the rains set in, and the seed is broadcast on it. If the monsoon rains hold off, the plot is irrigated. With regular rains, the plants are a foot high in two weeks. The main fields are prepared by several light plowings, and after they are flooded the seedlings are transplanted to them. The plant tops reach above the water, and their roots become established in about two weeks. The fields are drained occasionally and weeded, and by harvest time are drained completely dry.

Ethel Simkins,[142] in a geographical survey of rice cultivation on the coastal plains of south India, finds that on the western coasts rice is grown the year around, as it is in Java. This does not hold true for the Madras coast, though the spring rains there do allow an early-season crop to be cultivated. The west coast, having dependable rains, needs little irrigation, whereas a large percentage of the east coast is irrigated. In the deltas, rice is grown on "wet paddy" land. Where the fields are irrigated, three crops a year are sometimes grown The main crop relies on rains.

> The "lowland" varieties are always transplanted; the "upland" rice is sown broadcast . . . [it is] a poor and coarse-grained variety, usually grown unirrigated.[143]

Wickizer[144] likewise remarks great variety in Indian agricultural practice.

In Asia the descriptions of rice cultivation have been over-simplified in the literature. Actually no sharp division in agronomic practices exists between the more and the less sophisticated peoples. The transitions between the methods employing irrigation and dry farming are too numerous to justify the continued use of "wet" and "dry." Classifications according to habitat, as "upland," "lowland," "mountain," and "swamp" are useless because the plant adapts so readily to varied environments. In comparative work and historical reconstructions such terms alone are inadequate.

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[142] Simkins, 1933.
[143] *Ibid.*, p. 39.
[144] Wickizer and Bennett, 1941.

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TERENA SOCIAL ORGANIZATION AND LAW

By KALERVO OBERG

FOR three centuries or more the Terena Indians have been going through a process of rapid change which has affected their entire culture, this change being particularly apparent in their economy, social organization, and religious beliefs and practices. At least four distinct stages of readjustment are discernible: (1) the development of a military and class organization in the Chaco, (2) migration into Brazil and the abandonment of the military organization, (3) a period of detribalization, and (4) tribal reintegration on a Brazilian government reservation. Changes in Terena social organization alone will be dealt with in this paper.

The Terena belong to the southernmost extension of the Arawak-speaking people, who, before their migration into southern Mato Grosso, Brazil, around the middle of the nineteenth century, lived in the Paraguayan Chaco on the west side of the Paraguay River. In common with their Arawak-speaking neighbors, as for example the Guaná, Layana, and Kinikinao, the Terena were originally settled, village-dwelling agriculturists. In the Chaco these tribes came under the domination of the warlike Guaricurú-speaking Mbayá.[1] Whether the Terena were ever actually vassalized is not clear. The Terena themselves deny this. What is significant, however, is that the Terena adopted the horse and the warlike habits of the Mbayá and began to raid their neighbors for captives and livestock. This stage of development is still fresh in the memory of the men whose grandfathers came from the Chaco.

Terena informants relate that while they were in the Chaco they lived in villages and were divided into moieties. One moiety was called the *sukirikiono* or gentle people ("mansa" in Portuguese), and the other the *shumono* or wild people ("brava" in Portuguese). The moieties were of equal status and endogamous. Although these moieties were primarily ceremonial units, they exercised social control over their members by regulating marriage and acting in council to settle matters concerning group decisions.

Each moiety had a chief (*unati ashe*). Any village of any size, therefore, had two moiety chiefs. The symbols of moiety chieftainship consisted of a small calabash (*kali ita'aka*), a trumpet made from a cow's horn, and a loin cloth (*shiripa*) somewhat shorter than that worn by non-chiefs. There was no head chief for either moiety nor for the Terena people as a whole. Each chief was the ceremonial leader of his moiety in the village, the leader at moiety council meetings (*itishovoti*) and the spokesman of his group in matters concerning the village and the tribe. The moiety chiefs do not appear to have had any judicial functions, their powers being limited to advising and warning quarrelsome individuals.

[1] *Handbook of South American Indians.* B.A.E. Bulletin 143, pp. 238–241, 1946.

The succession of moiety chiefs was controlled partly by heredity and partly by the will of the people. When a chief died, the son who resembled him most in personal characteristics was selected chief by the moiety in council. The people could also select the chief's brother or brother's son. Women were not eligible for chieftainship. This account of selecting chiefs is at variance with the rather elaborate rules of succession described by other writers.[2]

During every-day life there was nothing to distinguish members of one moiety from another. Their houses were not segregated nor were they set apart by differences in habits or clothing. During ceremonials, however, the behavior of the two groups towards one another changed radically. The *shumono* or wild people began to play tricks on the *sukirikiono* or gentle people who went on their dignity and suffered all the tricks and insults which the *shumono* heaped upon them. Some of the tricks which the *shumono* played on the *sukirikiono* were the following: During daylight and in the presence of others a *shumono* man would carry on rough sexual play with a woman from the opposite side; a *shumono* would paint the face of a sleeping member of the *sukirikiono*, later giving him a mirror so that he could see himself; a group of *shumono* would catch a member of the other side and pull and push him about in the center of the village; during feasts a *shumono* would turn a dish of food over the head of a *sukirikiono;* sometimes a *shumono* would put the contents of a butchered cow's stomach in a bladder and go about squeezing the bladder over the heads of the *sukirikiono*. Licence of this nature was limited strictly to ceremonial periods. A *sukirikiono* was not supposed to get angry, and tried to shame the tricksters only by jokes and witty remarks in an effort to make himself appear superior. During ceremonies in which the moieties danced opposite one another, the members were distinguished by body painting; the *shumono* would paint their bodies in horizontal lines of black and white while the *sukirikiono* would paint half their bodies white and the other half black.

In addition to the dual division the Terena were separated into four social classes: (1) chiefs (*unati*), (2) warriors (*shuna'asheti*), (3) commoners (*wahereshave*), and (4) slaves (*kauti*). The chiefly class comprised the moiety chiefs and their relatives. The *unati* were the highest class in rank and were supposed to marry within their own group. As one could marry only within his own moiety this often meant village exogamy to members of this class. On coming of age the sons of the *unati* went through an elaborate puberty ceremony (*tima*) which amounted to initiation into the chiefly class. In historic times the principal part of the ceremony consisted in the boy approaching his father dressed in a light red blanket which he would take off and substitute for the dark red blanket worn by his father. Only the sons of the *unati* went through this ceremony. The daughters of the chiefs also went through a puberty ceremony (*iyoti*)

[2] *Ibid.*, p. 310.

much more elaborate than the puberty ceremony of the daughters of common people.

All the living war-chiefs and their children and relatives made up the warrior class. Here again marriage within the group was demanded. Commoners were free tribesmen who had not acquired status through war, or marriage into the two upper classes. Slaves were young women and children captured in raids, or the children of war captives. Slaves performed services for their masters, followed them in war and danced with them during ceremonials. If a slave distinguished himself in war by killing an enemy he could become a free man. It is said that a slave could even become a war chief if he were particularly successful in war. On the other hand, a slave could be sold or killed by his master.

In war, moiety differences were disregarded and the village acted as a unit. Every large village had a war-chief (*shuna'asheti*) who held office both in war and peace and was the head of the warrior class. As an individual he had the highest rank in the village, drank first at all ceremonies, and carried a cow's-horn trumpet as a symbol of rank. In addition, he wore a jaguar-skin shirt and a headband of parrot feathers. The war-chief had considerable authority over warriors both on war parties and during periods of training. The position of the war-chief was not a hereditary one although his son could succeed him. A new chief was always selected from among outstanding warriors on the basis of merit—he had to have killed at least one enemy and to have otherwise distinguished himself as a leader and a man of courage.

The ceremony during which a new war-chief was chosen was a serious and solemn occasion. The moiety chiefs called all the men of the village together and extolled the merits of the candidate for war chieftainship. The men-in-council would then signify their assent. After the selection was made, a slave would fill and light a clay pipe and would offer it to the old war-chief, who, owing to age, illness or wounds, no longer wished to go to war. After taking a few puffs the old war-chief would kneel on one knee before the candidate and offer him the pipe, saying, "I am now being relieved of the responsibilities of leadership and hope that you will carry on my task with success." He would then rise, take off his jaguar-skin shirt and offer it to the new chief as a symbol of his new status. The new war-chief would accept it often with tears in his eyes as he knew that he must now be in the forefront of all battles and that his life was in great danger.

While in the Chaco the Terena carried on warfare for captives, horses, cattle, sheep and other loot. During large raids many villages combined, the ablest war-chief being selected to lead the war-party. The moiety chiefs fought with the tribesmen but not in the front rank; this position was reserved for men who had committed some criminal act, and if they succeeded in killing an enemy they were considered free men. Fighting was carried on with the bow

and arrow pointed with deer antler, often poisoned, and feathered with vulture feathers, the javelin, which in historic times had an iron head, and the heavy wooden sword. After a large raid was over the leading war-chief would again be just the war-chief of his own village.

From what has been said the importance of the village as a primary social unit is clear. The moieties were organized on a village basis, each with its own moiety chiefs. Although several villages, or the whole tribe, might participate in war under a temporary leader, the village still remained a primary war-making body under a permanent war-chief. Villages were located in areas of arable land near rivers, and each might consist of as many as twenty houses, most containing several families. Cultivated plots surrounded the village. If a plot was at some distance, a temporary hut was put up to shelter the cultivator over night, but this practice was not common, however, as there was always danger from enemy raids. Villages were constantly guarded against surprise attacks.

The primary economic unit was the family, consisting of a man, his wife or wives and their children. The husband and wife cultivated the gardens. The husband hunted and fished, while the wife and children collected wild roots, pods, and other plant foods. In spite of considerable hunting and collecting, the economy of the Terena was based on the cultivation of manioc, maize and beans.

Law. The law-enforcing group was the extended family. If a man committed murder the relatives of the murdered man would try to kill the murderer in revenge. By custom only one day was allowed for retaliation. If the murderer escaped to his own relatives and an attempt was made to kill him a feud would follow. To avoid this, custom demanded that the murderer be placed in the forefront in the next raid. If he succeeded in killing an enemy the crime would be expiated. If he did not succeed he would have to continue until he killed an enemy or was killed himself. This rule applied to members of all classes. It is said that the relatives of the murdered man saw to it that the murderer had little chance of avoiding death at the hands of the enemy.

If a man caught another in the act of adultery with his wife, he could kill the man, which would settle the matter. He could kill his wife also but usually contented himself by beating her. But if the adulterer killed the husband it also was not considered murder, as he was defending his life. This, however, brought shame to the husband's family as he was supposed to be able successfully to defend himself and the honor of his family.

If an unmarried girl acted immorally, she was tied and dragged around the village for everyone to see. Usually, however, if a girl went with a man against her father's will she escaped to another village, which usually ended the matter.

Incest does not seem to have been a capital crime. If sons and daughters committed incest, they were beaten by their parents.

Theft was not common but if it occurred the two extended families usually settled the matter by returning the stolen goods or by compensation in property.

If it was generally believed that a sorcerer had made one ill or had killed a relative by means of black magic, the sorcerer would be killed. The killing of the sorcerer had to be performed outside the village because if anyone killed a shaman in the village it was considered murder. Under these circumstances a man would wait until the sorcerer went hunting or went to cultivate his garden outside the village. If he succeeded in killing him the matter would end there. On the other hand, people feared shamans, for their relatives or other shamans would try to revenge the death.

The Terena stress the fact that there was little crime in the villages in the old days, the social unity of the village being strengthened by constant external danger and the moral authority of the war-chief and the two moiety chiefs. The treatment of murder shows that the villages did not leave punishment entirely to the extended families but attempted to avoid feuds through the enforcement of the village law of death in battle.

The bonds which knit the members of the village together and which gave cohesion to the classes were those of kinship. There were no clans. The moieties functioned primarily as ceremonial units. For general economic and political security an individual depended upon his kinsmen, both on his father's and mother's side.

Kinship Terminology. In the grandparents' generation there are two terms which are extended to siblings of grandparents, both maternal and paternal, and to their spouses. These two terms are *onju* for grandfather, and *onje* for grandmother.

In the parental generation there are two terms for ego's father—the referential term *za'a* and the vocative term *ta'ata*. There are two terms for mother—the referential term *ēno* and the vocative term *mēme*. Father's brother is termed *poiza'a* (literally, "other father"), and mother's sister is termed *poiēno* (literally, "other mother"). Father's sister is designated by the descriptive term *moketcanza'a*, and mother's brother by the descriptive term *ayoēno*. In addition to these terms for the siblings of parents, the Terena appear to have terms corresponding to uncle and aunt, for father's brother and mother's brother can be termed *eungo* or *lulu*, and father's sister and mother's sister can be termed *ongo*. A completely satisfactory explanation of these uncle and aunt terms cannot be made until more is known about the language and culture of the Terena. They may be respect terms for mother's brother and father's sister which are extended to male and female relatives of the parental generation in the manner in which *ta'ata* and *mēme* are extended to all older people in the father's and mother's generation.

In ego's generation, male speaking, there are two specific classificatory terms for brother—*enjovi*, older brother, and *andi*, younger brother. Both these

terms are extended to male parallel and cross cousins on both the father's and mother's side. A man calls his sisters and female parallel and cross cousins *mongetcha*. These terms are reversed when a woman is speaking. In addition, there is a more general term for brother, *lele*, which can be used to designate men of one's own generation of more distant relationship. The term *cucunâ* is used for designating a middle brother.

In the children's generation there are terms for son (*djeâ*) and daughter (*inzinê*) which are extended, male speaking, to the sons and daughters of brothers. Sisters' children are termed *nevongê*, sex being shown by the addition of *hoyeno* (male) and *seno* (female). When a woman speaks the terms are reversed.

There is just one term, *amori*, for grandchildren. *Hoyeno* and *seno* may be added if necessary.

In the parent's generation both classificatory and descriptive terms can be used for affinal relatives. Father's brother's wife may be called *mēme* or *yenolulu* (uncle's wife), and mother's sister's husband may be called *ta'ata* or *imaongo* (aunt's husband). Father's sister's husband is termed *imaongo* and mother's brother's wife *yenolulu*.

The terms for husband and wife are *ima* and *yeno*, respectively. The term for father-in-law is *imonjuko*, the term for mother-in-law, *imonge*. Ego, male speaking, calls his brothers' wives *enomiê* and his sisters' husbands *oneâ*. These terms are extended to the spouses of parallel and cross cousins. A woman calls her brothers' wives *onungenâ* and her sisters' husbands *enomiê*. The terms for son-in-law and daughter-in-law are *sinenâ* and *sinâ*, respectively.

The terminology for consanguineal relatives appears to indicate a kinship system basically similar to the Cheyenne and Arapaho sub-type. Father's brother is classed with father, and mother's sister with mother, while separate terms are used for mother's brother and father's sister. Grandparents and their spouses are distinguished by sex only. In the ego's generation the terms for brother and sister are extended to parallel and cross cousins. The children of brothers are "sons" and "daughters," male speaking, or nephews and nieces, female speaking. The children of sisters are the reverse. All children of sons, daughters, nephews and nieces are called "grandchildren."

In the past an individual was prohibited from marrying parallel and cross cousins or anyone whom he or she called "sister" or "brother." An individual was expected to marry within his or her own moiety and class. Marriage was generally monogamous but there was no objection to polygyny. There was no strict rule of residence, the young couple remaining with the parents who had greater rank and wealth. There was no mother-in-law or father-in-law avoidance.

The above is a general description of the social organization of the Terena about one hundred years ago. How much was due to Mbayá influence and how

much belonged to the pre-Mbayá period is difficult to ascertain in detail. Comparisons with the Caduveo, one of the few Mbayá groups left, appear to indicate that the kinship terminology, the moieties and the marriage rules are of Arawak origin, while the class and military organization was taken over from the Caduveo along with the horse. The custom of infanticide which the Terena claim to have practiced in the Chaco might also be of Mbayá origin.

Exactly what induced the Terena to leave the Chaco is not clear. Some say that attacks by other tribes made life so difficult that a shift became necessary; others claim that some of the Terena chiefs had to flee from Paraguayan justice; others that Brazilian officials offered the Terena lands in Mato Grosso. We find that the first group moved into Mato Grosso about the middle of the last century. This group settled near what are today the villages of Bananal and Ipegue. The leader of this group was Tovõlé. Other groups followed and settled near Miranda and Aquidauana, to mention only the larger Brazilian settlements. Tovõlé, although he received a badge of captaincy from the Brazilian government, was not recognized by other groups of Terena Indians. At Bananal Tovõlé was succeeded by his son, José Tavares Caetano. Later Manoel Pedro became chief and held office until Marcolino Lili, the present chief, took office in 1916.

As soon as the Terena came into Brazilian territory their political organization began to change. Brazilian officials selected one chief or head man in the various settlements with whom to deal. To the captain of the village the Brazilian authorities would give a title to an area of land surrounding the settlement. The effect of selecting captains to act as spokesmen for the villagers was to break down the dual organization and the system of dual ceremonial chiefs. With the cessation of warfare the position of war-chief naturally fell into disuse.

The unity of the family and the kindred was weakened in much the same way. From the time the Terena came to Brazil until 1916, they were responsible directly to the Brazilian government and were under the jurisdiction of Mato Grosso courts. Thus individuals no longer depended entirely upon their kinsmen for personal security. The moiety organization also began to break down. Marriage between opposites became common. For instance, Marcolino Lili, the present chief, married his opposite. In cases where the father and mother are of opposite sides, the children can choose the moiety to which they wish to belong, the father's moiety generally having preference. Even in ceremonials one can now temporarily join the opposite moiety in dances. With the acceptance of the Christian form of marriage and the adoption of Brazilian ceremonials like the "Bate-Pau," it can be safely said that the moiety organization is fast falling into disuse. In addition, the younger people no longer use the old kinship terminology. As a whole, Portuguese terms for brother, sister, cousin and uncle are gradually replacing Terena terms.

In the first decade of this century, settlers in increasing numbers followed

the railroad into southern Mato Grosso in search of grazing land. Terena lands were held under no secure title. It is said that documents relating to land grants given to Terena chiefs were often burned over a dead chief's grave, making evidence of ownership even more uncertain. The pressure on Terena lands forced the Indians to leave their villages in search of labor in railway camps and on the cattle *fazendas*. During periods when work was not available the Indians found it difficult to make a living, often having to resort to begging.

Fortunately, for the Terena as well as for other Indian tribes, Brazilians, sympathetic to the difficulties of the Indians who were in the path of the westward march of Brazilian settlement, recognized the plight of the natives and began to agitate for measures of relief. Early in the present century General Rondon began the survey of certain lands for the exclusive use of Indian tribes. With the establishment of the Serviço de Proteção aos Indios in 1910, the definite allocation of Indian lands shortly afterwards, and the location of a government Indian Post near Taunay in 1916, a new chapter opened for the Terena. Once again they were able to gather together in the villages they occupied on first coming to Brazil. Soon both Protestant and Catholic missionaries were active among them. Government and Protestant missionary schools were established. Various forms of economic assistance were provided by the government. The process of detribalization ceased. The Terena were once again a unified community with lands, a chief and legal protection.

With this new economic and social security, however, came new restrictions. Today the Terena are no longer entirely free. When living on Indian Service lands they are wards of the government, under the legal jurisdiction of the Indian Service. Every post has a Brazilian manager who maintains order with the assistance of several Terena policemen appointed by himself. For minor crimes prisoners are sent to other Indian posts to serve out their sentences. It is a common sight to see several of these prisoners doing the hard labor on the premises of an Indian post. Even cases involving murder are tried by the courts of the Indian Service. For long-term imprisonment, Indians are sent to a special penal post in São Paulo State. Although the Terena have had a chief at Bananal since 1916, he has had little authority, his principal function being to act as a go-between between the Terena and the manager of the post. Individual activities and movements in and out of the villages are to some extent supervised by post managers.

On the basis of existing information the post-Columbian history of the Terena, therefore, reveals the following stages in social readjustment: (1) To meet the threat to their tribal unity presented by the powerful impact of the warlike Mbayá, the Terena were able to assert their independence through the adoption of the horse and the class and military organization of the Mbayá. In other words, given time, the Terena were able to compete with the Mbayá on their own terms. (2) With increasing pressure and decreasing resources the

Terena solved the problem of their tribal independence through emigration into Brazil. This movement involved the acceptance of political domination by the Brazilian government, the relinquishment of their recently adopted military organization, and the moiety organization with its dual chiefs. (3) Met by the full tide of Brazilian settlement around the end of the last century, the Terena as a tribe were faced by extinction. Contact initiated a process of detribalization, individual impoverishment and moral degradation. The Terena, in common with many other Brazilian Indians, were not able to compete with their white neighbors on equal terms either individually or as an organized group. The continuation of this process would have led to the ultimate absorption of the Terena into the general population, a process which has been repeated numerous times in Brazil. (4) With the assistance of the Serviço de Proteção aos Indios, the Terena were able to reintegrate as a tribal group. The primary elements in this stage of readjustment are security in the possession of a common tribal territory which excludes non-Indians, economic assistance through wage-work provided by the post managers, legal protection through Indian Service courts, and education and training provided by government and mission schools. In effect this is a form of artificial isolation necessary for the protection of a people who are unable to survive as a group in open competition with its neighbors.

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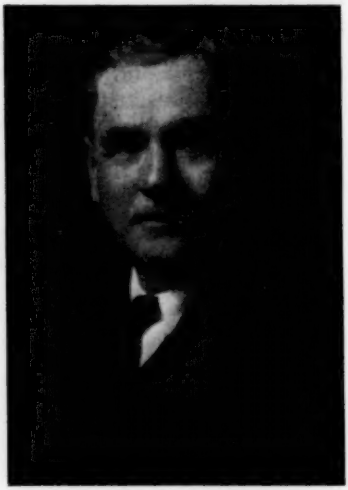
CLARK WISSLER, 1870–1947

By GEORGE PETER MURDOCK

ON AUGUST 25, 1947, death removed one of the most widely known and respected of the elder generation of American anthropologists. Clark Wissler was born on a farm in Wayne County, Indiana, on September 18, 1870. He was the eldest child of Benjamin Franklin Wissler and Sylvania (Needler) Wissler. Through his father, who at various times was a farmer, a school superintendent, and the editor of a county newspaper, he was descended from a line of "Pennsylvania Dutch" ancestors, who had migrated from Swabia in Germany to Pennsylvania and thence to central Indiana. On June 14, 1899, Wissler married Etta Viola Gebhart, who survives him, as do a son, Stanley Gebhart Wissler, and a daughter, Mary Viola Wissler.



Clark Wissler

Wissler received his elementary education in the Indiana public schools, graduating from the Hagerstown High School in 1887. He then taught for five years (1887–1892) in local rural schools, and served for a year (1892–1893) as principal of the high school from which he had graduated. During this period he studied at Purdue University during the summers. In 1893 he matriculated at Indiana University, receiving the B.A. degree in 1897. During his last two undergraduate years, while he was majoring in psychology, he held an assistantship in this subject and conducted laboratory experiments on individual differences in mental abilities. From 1897 to 1899 he was Instructor in Psychology and Education at Ohio State University, combining his teaching with further research and graduate work at Indiana University, which awarded him the M.A. degree in 1899. He continued his graduate studies under James McKeen Cattell at Columbia University, where he held first an assistantship (1899–1900) and then a fellowship (1900–1901), and received the Ph.D. degree in psychology in 1901. From 1901 to 1903 he continued his laboratory researches on individual mental differences under Cattell, and also served a year (1901–1902) as Instructor in Pedagogy at New York University.

It was at Columbia that Wissler first became interested in anthropology. Cattell was closely associated with Franz Boas, who occupied an adjacent office, and during his last year of graduate work Wissler enrolled in courses in anthropology under both Boas and Livingston Farrand in addition to his work in psychology and education. This training, together with his experience at the American Museum of Natural History, whose staff he joined in 1902, prepared him to teach anthropology at Columbia University, where he held successively the positions of Assistant (1903–1905) and of Lecturer (1905–1909) in Anthropology.

Throughout his entire active career Wissler was closely associated with the American Museum of Natural History in New York. From his first appointment to this institution, as Assistant in the Department of Ethnology (1902–1904) under Putnam and Boas, his interests turned primarily toward anthropology and away from psychology. At the Museum Wissler became Assistant Curator of Ethnology in 1904 and Acting Curator of Ethnology in 1905. In 1906 he succeeded Boas as Curator of the Department of Ethnology, and from 1907 until his retirement in 1942 he served as Curator of the Department of Anthropology. In 1937 he was elected Dean of the Museum's entire scientific staff. During this long period of service he sponsored numerous field expeditions, built up the ethnological collections, fostered the development of educational functions, encouraged archeology and physical anthropology, and initiated and carried through an ambitious program of publication.

From 1902 to 1905 Wissler devoted much of his time to ethnological field work among the Blackfoot and various Siouan tribes of Montana and the Dakotas, which resulted in a series of significant papers and monographs. Under his initiative the American Museum sponsored a number of other field projects, mainly in the northern Plains area, which produced a series of outstanding monographs that made this the best known ethnographic area in the New World. After 1905 Wissler engaged in no more intensive field work, though he traveled widely and made numerous inspection trips to Indian reservations.

From 1924 until 1940 Wissler was a member of the faculty of Yale University. Appointed first to a research position in the newly founded Institute of Psychology in 1924 and then to the staff of its successor, the Institute of Human Relations, he became Professor of Anthropology in the Department of Anthropology when this was established in 1931. His courses were largely attended, and evoked in the students a lively appreciation of the geographic foundations and regional distribution of culture. His wealth of anecdote made vivid the early development of American anthropology and initiated the novice into the unwritten tradition of the profession. Colleagues as well as students found in Wissler a tolerant and sympathetic advisor. This reviewer, in particular, owes him an enduring debt of gratitude for undeviating support in

the endeavor to establish at Yale a broadly oriented and diversified department of anthropology.

Wissler's activities were by no means confined to the American Museum and to Yale. He was consultant to the Bishop Museum in Honolulu, official advisor to the Carnegie Institution of Washington, and vice president (1940–1943) of the Advisory Board of the National Parks Commission. In 1920 and 1921 he served as chairman of the Division of Anthropology and Psychology of the National Research Council, and at various times participated in numerous committees of both the NRC and the Social Science Research Council. He was an active member of a dozen scientific societies, and held office in a number of them. Thus he was president of the American Anthropological Association in 1919, president of the American Association of Museums from 1938 to 1943, president of the New York Academy of Sciences in 1930 and 1931, vice president of the American Association for Adult Education in 1937, and vice president of the American Association for the Advancement of Science in 1915. His honorary memberships included the American Philosophical Society, the Educational Research Association, the National Academy of Sciences, Phi Beta Kappa, the Royal Anthropological Institute of Great Britain and Ireland, and Sigma Xi. He received an honorary LL.D. degree from Indiana University in 1929, and an honorary M.A. from Yale University in 1931.

Wissler's contribution to anthropology has not been primarily in the field of theory. The culture-area concept, which is most commonly associated with his name, appears actually to have been evolved in collaboration with Boas, Farrand, and others during his early days at the American Museum of Natural History, in the endeavor to find a more satisfactory system for the classification of ethnological specimens than was provided by the previous classification according to linguistic stocks. Even the culture areas proposed for North America in *The American Indian* (1917) are very similar to the divisions used by Farrand in his *Basis of American History* (1904), and in several cases bear identical names. The areas themselves have been shown[1] to be based primarily upon technological data and not to be applicable to many aspects of social culture. The conception of regional centers of cultural elaboration from which diffusion spreads like ripples equally in all directions is now generally recognized as over-simple,[2] and the correlative "age-area concept," by which the antiquity of cultural elements can allegedly be inferred from the magnitude of their distribution—a hypothesis which Wissler shared with Kroeber—can today be accepted, if at all, only with such serious qualifications as to make it practically unusable.[3] It is questionable, indeed, whether any

[1] *See* C. A. Woods, "A Criticism of Wissler's North American Culture Areas," *American Anthropologist*, n.s., 36 (1934), pp. 517–523.

[2] Cf. R. B. Dixon, *The Building of Cultures* (New York, 1928), pp. 167–180.

[3] Cf. W. D. Wallis, *Culture and Progress* (New York, 1930), pp. 63–76.

theory propounded by Wissler can rightly be claimed to have outlived its author.

The source of Wissler's reputation must be sought elsewhere than in the theoretical formulations he expounded. To him is due in large measure the immense scientific productivity of the American Museum of Natural History. The number and range of the ethnographic publications of this institution demonstrate that Wissler must share with Boas the credit for establishing field research as the hall-mark of American anthropologists. Furthermore, it is doubtful whether any of Wissler's professional contemporaries did as much as he to disseminate the basic concepts of anthropology among practitioners of the other social sciences. *Man and Culture* (1923), in particular, taught sociologists and others the substance of what anthropologists knew of the nature of culture, of the processes by which it changes, of its relations to geographic environment and to man's innate biological and psychological equipment, and of the place of modern culture in world perspective. One result was the movement toward "cultural sociology." Another was the increasing awareness of cultural factors on the part of social psychologists.

In still another respect the influence of Wissler paved the way toward the integration of anthropology with the other social sciences. Though he abandoned psychology, Wissler never lost entirely his earlier interest. This made him sympathetic toward the development of research in the field of "culture and personality." Thus he supported the work of Margaret Mead at the Museum and cooperated from the first in the program of the Institute of Human Relations at Yale. His sponsorship of new trends in anthropology was, however, by no means confined to this particular field. He was ever ready to encourage his students and associates in their search for broader horizons. If any anthropologist of his generation can be said to have bridged the gap between the narrow isolationism of the Boas period and the rich and fertile vitality of the anthropology of today, that man was Clark Wissler.

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[4] Prepared through the courtesy of Miss Bella Weitzner and Miss Mary Wissler.

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BOOK REVIEWS

AMERICA

The Indians of the Americas. JOHN COLLIER. (326 pp. 17 pls. 2 mps., $3.75. W. W. Norton and Company, New York, 1947.)

Here are findings and applications to the modern world situation, as timely as the morning newspaper, by a man who has devoted a lifetime to their understanding and solution. This is not an "armchair" theorist but a man who gave of himself without stint for thirteen years to the problems of the American Indian before becoming Commissioner of Indian Affairs, a position which he held for twelve years. He completely re-oriented the point of view and application of the U. S. Government toward the American Indian by instituting a program of "careful research before action."

The book includes a sensitive presentation of the total history of the American Indian from prehistory up to the present. The reconstruction and presentation of the civilizations and cultures of the pre-white New World are of the highest order. They are not archaic cultures of pots, monuments, temples, and rituals to the reader, but living functional entities with an aliveness seldom found in presentations.

The importance of a thorough background based upon facts before proper action can be instituted becomes crystal clear in the book.

This is a book on social engineering where the recommendations follow from the material, and where the proposed applications are broadly anthropological. On page 281 Collier presents us with a definition of functional democracy which is well worth quoting:

> It is no contradiction that even blunderingly making dependent peoples free to grapple with real emergencies is hygienic, life-releasing and life-saving. The apparent contradiction is cancelled out with time, if the administrator is faithful to the spirit of science, to the spirit of that knowledge which he has not yet mastered. It is from the needs of action that knowledge is dynamically empowered. Imperfect action is better for men and societies than perfection in waiting, for the errors wrought by action are cured by new action. When the people acted upon are themselves made true partners in the actions, and co-discoverers of the corrections of error, then through and through, and in spite of blunders or even by virtue of them, the vital energies are increased, confidence increases, power increases, experience builds toward wisdom, and the most potent of all principles and ideals, deep democracy, slowly wins the field. This presupposition of the Indian Administration since 1933 has been borne out by all of the experience.

As Commissioner of Indian Affairs, John Collier was not the political appointee and cats-paw of vested interests and pressure groups who had previously controlled the Office of Indian Affairs so many times.

The Commissioner initiated many reforms and in that process instituted many needed mechanics for accomplishing them. Field research, historical background, and the functional interrelation of Indians and whites all were taken into consideration and applied in the solving of the vexing problems of the various Indian groups within the United States, and to counteract the U. S. treatment of the Indian which has left a deep and angry scar upon American history.

The book makes clear that although the men who committed the crimes and those against whom the crimes were committed are dead, the injustices started at that time continue into the present and affect the everyday living of the modern Indian.

There are many lessons to be learned from a study of the history of the treatment of the American Indians by the representatives of the western civilizations. The intense program of brutality, murder, deceit, and treachery indicates that it is an ever-present part of every population and that the population itself must be on constant guard, or the weak minorities are exploited, decimated, and brutalized. Yet despite a prolonged intensive program of this kind we find that the populations, in many cases, retain their way of life and, given the opportunity, that way of life is brought into dominance again. We also learn that by a study of different cultures it is possible to understand other values besides our own and to attempt to integrate them into our own way of life.

The enthnocentrism of the European kept him from seeing that the community feeling, the cooperative form of living, and the unity of the Indian with his own people, his land, his universe, made for a community way of life which we do not have.

Many Spaniards, in their attempt to establish themselves in their own way of life, sought gold and riches. They resorted to murder, slavery, and treachery, to attain the riches which in turn were to give them that better way of life. Yet that better way of life was there to be participated in had they not been blinded by their greed for power and wealth. That greed was instrumental in bringing about the disintegration of the Spanish Empire.

Collier sums up his findings after a lifetime of intensive and intimate experience on pp. 285–287:

> First, biological racehood, whether it exists or not, is without practical importance. . . .
>
> Second, in ethnic matters, as in other vital matters, governmental intervention can be baneful or benign. In any field of human relations, when government tries to do the whole job, authoritatively and monopolistically, the result is baneful. The earlier Indian record is replete with evidence of this. But when government makes research an inseparable part of its ethnic operations, eschews monopoly, acts as a catalytic and co-ordinating agent, offers its service through grants-in-aid to local subdivisions, then government can be decisively benign, as the recent Indian record demonstrates. . . .
>
> Third, the individual fares best when he is a member of a group faring best. . . .
>
> Fourth, in ethnic groups of low prestige the apparent inferiority (acquired or innate) may mask an actual superiority. . . .
>
> And last, the Indians and their societies disclose that social heritage is far more perduring than is commonly believed. . . . Perhaps no other ethnic groups have revealed this old, all-important truth so convincingly as the Indians have done. . . .

Of timely importance is the presentation that the world population to an even greater extent is involved in the meeting of different populations with diverse ways of life, and that a program based upon research and understanding can lead to fruitful advancement for all groups. The opposite viewpoint which is prevalent at the present time, that of considering one's own way of life the only way and all others valueless, keeps us in our present state of turmoil and conflict.

It is in this province that anthropology can be of greatest value to the world because anthropologists have reported a large number of diverse experiments in the contacts of diverse populations. John Collier presents those which have resulted in efficiency to both sides, and those which have brought about a better way of life to both populations concerned. His recommendations for the future of the world are drawn from these cases. He states this on page 16 when he says:

If our modern world should be able to recapture this power, the earth's natural resources and web of life would not be irrevocably wasted within the twentieth century, which is the prospect now. True democracy, founded in neighborhoods and reaching over the world, would become the realized heaven on earth. And living peace—not just an interlude between wars—would be born and would last through the ages.

And on pages 285–286:

It is of national importance, and necessary to the good role of our Occidental governments in the world, that ethnic groups shall have equality of opportunity, shall be enabled to contribute their ideals and genius to the common task, shall not suffer discrimination, shall be free to breathe deeply the breath of public life. The Bill of Rights and the Constitution within the United States, the Charter of United Nations in the world, must be made good. It follows that governments and the federation of governments should and must concern themselves with ethnic matters, and that the methods should be right and not wrong.

The aliveness and sparkle of style, the careful yet sensitive presentation of the cultural histories of the American Indian populations, and the searching recommendations applied to our modern world situation place this book in the high bracket of accomplishment.

The book is strongly recommended although some of the phraseology may be misunderstood until the reader has read beyond the immediate phrase. It is a book by an inspired man, an honest man, a sincere man, a capable man, who emerges in this book as a man who has a definite solution based upon a lifetime of research and knowledge rather than on theory.

This is the book which will aid in counteracting the influence of many of our high school and college history books. It should be required reading in high school and college.

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NORTH AMERICA

The Spoilage. DOROTHY SWAINE THOMAS and RICHARD S. NISHIMOTO. (380 pp., University of California Press, Berkeley, 1946.)

This book is the first of a series of three on consequences of evacuation for 110,000 Japanese-Americans uprooted in 1942 from homes in three Pacific coast states. A second volume, *The Salvage*, promises to treat of resettlement in eastern and mid-west states. The third, already titled *The Residue*, will concern that population segment which ultimately returned to coastal areas. The total study, projected according to the Preface as early as 1942, has support from Rockefeller, Columbia and Giannini foundations. We are told that it was originally, if anything, more ambitious in conception than now appears; but even so the participants and Dr. Thomas as director deserve commendation for seeing it through to publication. The University of California at Berkeley likewise had a hand in these efforts and as a result becomes, along with the Library of Congress archives, an official repository of governmental documents evoked in this process.

In a broader sense, *The Spoilage* is part of a larger literature. Under imprimatur of the United States Department of the Interior several volumes on evacuation and resettlement have already appeared in a completed series. One of these, somewhat

parallel to the Thomas-Nishimoto study, is called *Impounded People* and is the work of social scientists—E. H. Spicer, K. Luomala, A. Hansen, and the reviewer. The interested reader will profit by consulting and comparing these two studies and, in addition, ten other volumes prepared by the War Relocation Authority, not to mention Leighton's *Governing of Men*, LaViolette's *Americans of Japanese Ancestry*, McWilliams' *Prejudice*, and Lind's *Hawaii's Japanese*. Surely, evacuation and resettlement produced a literature. It already reaches far beyond the scope of *The Spoilage*.

Having identified this study in the context of a research field, it remains to assess its usefulness for the specialist and for the general field of anthropology. It contains a Preface on methodology for the entire series; next an eighty-page account of evacuation, center settlement, Army loyalty registration, and the beginnings of the Tule Lake Center in northern California; finally there follows a three-hundred-page discussion of this specific center after it became the segregation center of the War Relocation Authority, War Department and Department of Justice. The Preface begins bravely with a statement of the "interdisciplinary approach of the study (sociology, social psychology, anthropology, political science and economics)." This method, we are told, resulted "in a situation analogous to differential diagnosis" and provided a check upon a major methodological problem, that of separating "subjective ad hoc interpretations from the more objective behavioral records." The book ends on page 380 without adequately demonstrating the utilization of these abundant resources.

For one thing there is the somewhat dogmatic assertion that economic data were unobtainable. Concerning anthropology, it is apparent that neither of the authors attempted any field work warranting the name in this specific center. To be sure, there is mention of the use of trained observers, twelve divided among several centers, who "had university training in one or more of the social sciences." In addition, three Caucasian staff members resided in centers, the segregation center assignment, upon which most of the book is based, being in the hands of a fieldworker who made three brief visits in 1944 and then remained in residence most of the year from May, 1944, to the following May. While four contributors are listed, only one was at Tule Lake when "the spoilage" of segregation operated, a period of over two years. Dependence upon one person for major contributions led, in turn, to undue credence afforded about two dozen factional leaders who happened to impress the fieldworker, during the year period, as knowing the Center. The basic contrast lies between the first eighty pages, which are excellent, contain wide sampling and inter-center comparison, and the marked tendency toward incomplete coverage and sensationalistic opinion which follows. Actually, Mr. Robert Billigmeier, who certainly understood and covered his center of 13,000 people up to the point of segregation, extends this objectivity still further into the chapter, "Segregation." But around page 100, the penchant for quoting "an Issei," "Kibei," or "Nisei" stands out since context is generally lacking; on pages 101–102, for example, "Kibei" are stereotyped and oversimplified on the basis of two short quotations from two of their number. After three years at Tule Lake, with a staff of sixteen technical assistants, hundreds of contacts, and a tendency to sample opinion by block, area of the center, faction, personality variant, age and status group, I am greatly dubious of such oversimplifications.

The reliance of one fieldworker upon testimony of a few dozen persons among thousands available is, of course a highly vulnerable method; and, since the technique

of description is governed by quotations from these individuals rather than by analytic procedures, there is a certain amount of careless interpretation specifically resulting from overstress on one set of factional leaders (Daihyo Sha Kai) and the boundless credence afforded them which reifies their rationalizations. On page 103, the authors remark "a tendency among large numbers of Tuleans toward narrowly opportunistic decisions to hold to the status of 'disloyalty' "—the term "Tuleans" here referring to a rival faction apparently. In several reports written before, during and after segregation, we pointed out carefully that pontifications about "opportunism," based on the "loyalty-disloyalty" labels, were actually misleading since these labels had long since lost any objectively significant meaning in the maelstrom of emotionalized reactions to consistently discriminatory treatment. In Denver, before the baleful program of segregation went into effect, we argued against it, predicted its immediate and long-range results, and finally indicated that the only valid distinctions which could be sought within this population would be cultural identifications and socio-economic stati, not political determinations; family typologies, not loyalties; emotionalized reactions, not consistent international programs. It is surprising to find the old labels applied, amid pontifications, years later.

With social, cultural, economic and psychological analysis lacking at points in the record, a factional interpretation threads through the final three hundred pages. On page 110, the same Tuleans of the rival faction are castigated for an alleged control of the Co-operative Enterprises of the Center: "There were no major positions left unfilled" when people arrived from other centers. On page 168, this inaccuracy is swallowed with the rumor, "Residents had noted that fruits . . . on purchase by (the government) were conspicuously absent from the messhalls but were on sale in the (Co-operative's) canteens." This last refers to a million-and-a-half-dollar enterprise undergoing regular, periodic audit by both governmental agency and reputable private firms. In the event the reader remains unconvinced by these allegations of opportunism, job monopoly and the supposed dishonesty rampant among six thousand Tuleans, their factional leader receives the sociological description of "dressy and dandified" and his chief cohort is implied to have been "opportunistic" in decisions to safeguard a son "of draft age." A Mr. Tada (pseudonym) of a more-favored rival faction likewise had a son of draft age, but this fact is not adduced in accounts of his heroics. On pages 117–119, this favored faction is described as having duly elected a representative body "in about the proper proportions, but some blocs of transferees were markedly over-represented and were soon able to obtain and hold positions of control in the organization"; on page 142, this curious contradiction is doubly confounded when we learn that the elections of October 16th, "in proper proportions" yet "markedly over-represented" by some blocs of transferees, were completed on November 4th by "arrangements for selecting the permanent representative body." Staff members and Center contacts who were selected into this representative body give no indication of a *bona fide* elective process.

The contradictions of *The Spoilage* arise from credence given to accounts written up and mimeographed by the favored faction months later. On page 131, the favored faction is credited with community support of the now-famous November 1st Incident, contrary to all evidence in print. On page 140, Mr. Myer, Director of the Authority, is alleged to have unwillingly attended a staff meeting in the nearby town of Tule Lake;

there was no such meeting outside Center confines. At another point, the favored faction is credited with having eluded administrative notice while "organizing their protest movement" (p. 120) whereas, in truth, there was practically daily contact. On pages 153, 157, and 158, the Center mimeographed newspaper is quoted first as calling, later as cancelling, a meeting between Daihyo Sha Kai (Negotiating Committee) and the Army and WRA; again the Daihyo Sha Kai position is presented approvingly, unmindful of the fact that for several issues, following Army control of the center, the paper was published under direct and exclusive control of the Negotiating Committee alone and that no meeting with the Committee had been sanctioned by the Colonel in command and certainly none cancelled. The point of these corrections, and of scores of others for which there is neither time nor space, is that well-heated attempts to play sides in factional disputes which rend any aggrieved and disaffected community are only possible where the proper interpretation of factionalism in general is lacking. Certainly factionalism is a matter of prime importance in a field called applied anthropology. Equally, there is no substitute for field work in community study.

While the study contains certain details of the caste system of Tule Lake and much commentary—through WRA, War and Justice department official documents—on the cruder forms of policy manipulation of the Center, it fails to explain the cultural revivalism which flourished there and is implicit in the steps leading to citizenship renunciation. Ending with renunciation rather than with Center closure, the entire final chapter of Center history is missing, including the complete transformation of Tule Lake to the most relocation-minded Center of all. The anthropologist interested in cultural revivalistic phenomena must look elsewhere, though this case is perhaps the most striking and controlled experiment in social psychology to be found anywhere. As a result, Tule Lake is given too much the cast of a "disloyal" center where "disloyals" were treated badly. *The Spoilage* becomes an excellent source-book on government documents, but the treatment of daily rumors and the ebb and flow of opinion are subordinated to the presentation of factional claims; and there is practically nothing on Center art and religion, recreation, welfare and economic status. Obviously, the 19,000 men, women and children cramped in a square mile of tar-papered "theater of operations" barracks do not emerge as people. The effects of discriminatory and racist treatment are only in part reflected. And the need in social science apparently is to know the possible limitations of a few dozen informants or where the document ends and broad social analysis begins.

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MIDDLE AMERICA

Maya Explorer—John Lloyd Stephens and the Lost Cities of Central America and Yucatan. VICTOR WOLFGANG VON HAGEN. (xviii, 324 pp., 2 maps, 38 pls. University of Oklahoma Press, Norman, 1947.)

In 1834 John L. Stephens was a young New York lawyer with a flair for politics, bound for Europe for the sake of his health. Nine years later he had published four

successful travel books. The last two were *Incidents of Travel in Central America, Chiapas and Yucatan* (1841), and *Incidents of Travel in Yucatan* (1843). These tremendously enlarged the pitifully small amount of previously published information on what are now called Maya Indian ruins, and eliminated the supposed mystery of who built the ancient "cities." Each two-volume work was illustrated by Frederick Catherwood, an English artist and architect who, like Stephens, had been fascinated by ruined past magnificence in Egypt. The place of these books in the history of research on the ancient Maya is such that the centenary of their publication was marked in Mexico by a memorial volume of essays by specialists; and in the United States of North America present-day admirers of Stephens have sought out his grave and erected a suitably engraved tablet over it.

Stephens was a man of curious and thoughtful turn of mind. He had the energy and know-how required to get him where he wanted to go, and the gift for writing entertaining as well as instructive reports concerning what was found. Catherwood also knew how to interest as well as to teach, though with visual images rather than with words. His chosen medium of public appeal was the cyclorama, the equivalent, I suppose, of the modern documentary film. He accompanied Stephens on his two Central American journeys—his drawings were made on the spot. Both men had a high regard for the drama inherent in the remains of antiquity, but also had great respect for the facts themselves.

The two works are not particularly hard to come by today and still make delightful reading. But they are rather long for the modern counterpart of the "intelligent public" for which they were written, and they could not place the Maya culture in proper relation to what is now known.

Von Hagen's book can be termed a biography, since it takes its hero from birth to death, and attempts to convey something of the social and political background of the times. We go with him to the Old World, and then to Central America and Yucatan, and finally to Panama and the building of the Panama railroad, in which Stephens played a leading part. But more than half the book deals with the trips through the Maya country, as do most of the illustrations. In this central core of the story the author paraphrases or directly quotes Stephens extensively and, as the story moves one about the country, undertakes to supply the reader with pertinent data and opinion from modern archaeological and allied sources. As they were not in Stephen's time, these sources are voluminous. Any author whose purpose is popularization could be excused for a few slips, and such might even be expected from one who has published fourteen books in eleven years. There is an exaggeration or two, but I did not notice any serious blemishes on this score. The book is attractively printed, makes exceedingly good reading, and should contribute its share toward a further increase in the present general interest in the ancient Middle American high cultures. Because of this it seems a pity that there is no advice to the general reader as to how he might use those sections of a 12-page bibliography which deal with the Maya. There is an index.

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EUROPE

Die Geschichte der Völker der Union der Sozialistischen Sowjet-Republiken. INSTITUT FÜR GESCHICHTE AN DER AKADEMIE DER WISSENSCHAFTEN DER UDSSR. (1 Halbband: *Von der Urzeit bis zu Iwan III*, 487 pp., $10.00. Mundus Verlag, Basel-Zürich, 1945–1946.)

The present work constitutes Part I of a somewhat ambitious four-volume work on the history of the peoples of the Soviet Union. So far as this reviewer has been able to discover, this is the only volume which has so far appeared in the German translation. The book is an official party publication, translated into German evidently for a Swiss public. It appears under the somewhat curious auspices of the Society for the Promotion of Normal Relations between Switzerland and the Soviet Union.

To the anthropologist, a compendious history of the ethnic divisions of the Soviet Union has long been a desideratum. But the present work, adhering as it does so closely to the party line, is disappointingly valueless. The pronouncements of Marx and Engels, of Lenin and Stalin, not to mention Lewis H. Morgan, become more atrophied with each repetition. One sees little point in even bothering to dismiss such a view as that expressed in the general introduction by the Soviet historian V. I. Lebedeve, after Marx, that "the history of human society is essentially the history of the development of production." And yet it is in this framework that the history of the peoples of Russia, both in Asia and in Europe, is centered. But any deviation from the prescribed party historiography is flatly termed a "Schädlingsarbeit."

Of interest is the continued blind acceptance by Russian scholars of Morgan's stages. The equating of the Paleolithic with the middle stage of savagery, of the Neolithic with barbarism and matrilineal descent, is carried over into the historical period. Thus Russian history is described in terms of ancient, slave-holding society, of feudalism, of bourgeois capitalism, and the like. Only with the rise of the classless state is the ultimate in human progress achieved.

Interesting as a social phenomenon though the revolution of the proletariat may be, the turning of history into a propaganda medium becomes a bit tedious. One is inclined indeed to lament the level to which Soviet scholarship in the social sciences has descended. The cultural influences of Byzantium, of the Mongols, of Western Europe, or of the Arabs are minimized, emphasis being laid on the indigenous growth of the Russian folk spirit. Names, geographical locations, and events, while mentioned, serve merely to bear out a preconceived evolutionism. The intriguing title is misleading; the present work is little more than a political document.

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Svenska Vävnadstekniker och Monstertyper. Kulturgeografist undersökning. EMELIE VAN WALTERSTORFF. (205 pp. Nordiska Museets Handlingar, No. 11. Stockholm, 1940.)

This is a detailed descriptive study of patterns and techniques in Swedish weaving, showing the survival and distribution throughout Sweden of a large number of different types of a very popular art. Skåne serves as the base, many patterns are illustrated, and 78 maps illustrate distribution of varied patterns and techniques in southern Swe-

den; 25 maps, mostly of entire Sweden, show the further extension of the same types. The descriptions seem ample and the peculiarities of the widespread distribution are interesting. A reader eager for an understanding of cultural processes yearns for additional explanations: why did certain types spread so widely, and by what means did they reach distant localities?

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ASIA AND OCEANIA

The Intellectual Adventure of Ancient Man: An Essay on Speculative Thought in the Ancient Near East. H. AND H. A. FRANKFORT, JOHN A. WILSON, THORKILD JACOBSEN, WILLIAM A. IRWIN. (vii, 401 pp. The University of Chicago Press, Chicago, 1946.)

It is not too much to say that this book dealing with the ancient Near East civilizations is "must" reading for all anthropologists interested in the broader aspects of their discipline. As the subtitle indicates, it represents an attempt to describe, analyze, and evaluate some of the more significant features of speculative thought in the ancient Near East. The sources utilized consist almost entirely of the *literary* remains of three Near Eastern peoples, the Egyptians, the Mesopotamians (Sumerians and Akkadians), and the Hebrews. The volume is therefore divided into three major divisions entitled "Egypt," "Mesopotamia," and the "Hebrews." The speculative thought of the ancient Egyptians—that is, roughly speaking, their metaphysics, politics, and ethics—are described and analyzed by the eminent American Egyptologist, John Wilson; that of Mesopotamia is treated by one of the world's leading cuneiformists, the Director of the Oriental Institute of the University of Chicago, Thorkild Jacobsen; that of the ancient Hebrews is discussed by the noted Biblical scholar William A. Irwin. Preceding these three main divisions is a theme-setting introductory chapter by the internationally known archaeologist Henri Frankfort, and his wife H. A. Frankfort, entitled "Myth and Reality"; it analyzes the psychological characteristics which distinguish ancient Near Eastern thought with particular stress on its supposedly irrational approach and mythopoeic logic. Finally the same authors conclude the book with a chapter entitled "The Emancipation of Thought from Myth," which begins with a brief comparative survey of the Egyptian, Mesopotamian, and Hebrew speculative thought, and concludes with a sketch of the doctrines of the early Greek philosophers from Thales to Parmenides who, according to the authors, destroyed the last hold of myth on thought.

Now while on the whole the book represents a noteworthy and valuable contribution to the history of man's spiritual development, it must not be inferred that all, or even most of its conclusions and generalizations are to be taken as valid and final. Fortunately the authors themselves are not unaware of the subjective and onesided character of some of their interpretations and hypotheses, and forewarn the reader to a certain extent. The basic difficulty lies with the present status of our source material, the available but inadequate literary remains of the ancients. If we take Mesopotamia as an example—and it is only of the Mesopotamian material that this reviewer feels qualified to speak—we find in the first place that the texts utilized spread over a period

of some two thousand years, from the third to the first millennium B.C. Throughout this long period of time, the land had witnessed numerous ethnic and political upheavals; the very language had changed from Sumerian to Akkadian. Under such circumstances it is obviously no simple task to extract the typical Mesopotamian mind and to abstract his underlying philosophic and religious concepts. In addition to this fundamental difficulty, there is the matter of the fragmentary and obscure character of many of the literary texts. In particular the Sumerian literary compositions—and these are far more numerous and significant for the problem than those written in Akkadian—are only now in the process of being translated and interpreted by a bare handful of scholars, and only with a fair degree of success. As matters now stand there is considerable room for differences of opinion on the actual translation of some of this material, not to speak of its more general interpretation within the framework of Mesopotamian thought. It is some of these differences of opinion which are noted and analyzed in considerable detail in a lengthy review-article to appear in one of the forthcoming issues of the *Journal of Cuneiform Studies*, a journal begun only recently by the American Schools of Oriental Research. May I take the liberty of suggesting that the anthropologist who has read the book under review will do well to refer to that article before making any final judgments on the nature of speculative thought in the ancient Near East.

But whether the reader does or does not agree with its basic concepts and major conclusions, he will do well to bear in mind that the volume undertakes no less a task than that of presenting a far-reaching and many-sided synthesis of the intellectual and spiritual concepts prevalent during a long and productive period in the history of civilization; the authors are to be congratulated for their courage and optimism as well as for significant achievement. As every Near Eastern specialist will vouch, it is a complex, difficult, and at times truly heart-rending task to dig out, piece together, and formulate the philosophic and religious concepts of the ancients from their varied, fragmentary, and not too lucid literary remains. The interested anthropologist will find himself deeply indebted to the authors for their clearly worded and highly stimulating efforts on a subject so elusive and attractive as ancient man's speculative thought.

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Autobiography of a Chinese Woman. BUWEI YANG CHAO. Put into English by her husband, Yuenren Chao (The John Day Company, New York, 1947.)

Buwei Yang Chao has written a lively book. She is, however, far from being the "typical Chinese woman" she says she is. No doubt cooking, sewing, marriage, and bearing children are the lot of most Chinese women. But here Mrs. Chao's typicality ends. It is not typical to be a member of China's intelligentsia, to have a grandfather who acted as Councillor in the Chinese Legation in London, to have a "real" father who studied engineering in France and Germany and was the "sworn brother" of the second President of China, to have an adopted father who was Mayor of Haining, Chekiang. It is not typical to grow up in a joint family of 34 members, living in 128 rooms and employing 27 servants, to be the principal of a school before going to college,

to study medicine in Japan, to found and administer a hospital. Nor is it typical to flout the authority of the family head in China, even today.

Mrs. Chao herself recognizes the questionableness of her opening statement, but she believes that the contradictions make it "all the truer." It would perhaps be more true to say that Mrs. Chao's life-story, while far from typical for Chinese womanhood as a whole, strikingly reveals how the impact of Western culture affected such Chinese institutions as the family and the position of women, particularly of women of the upper class—the intelligentsia and officialdom.

Great events have shaken China since Mrs. Chao's birth in 1889: defeat at the hands of the Japanese when she was a small girl; the fall of the Empire and the revolution of Sun Yat-sen when she was in her early twenties; the Japanese occupation and two World Wars; the present struggle for power between communists and Kuomintang. But it is not the political scene nor the crying needs of the Chinese people that crowd Mrs. Chao's pages. Her revolution is primarily a personal one.

The conflict with authority is told with frankness and relish, and anthropologists will find most interesting material here for comparative study. The ninth child of an oldest son, Mrs. Chao was given for adoption to her father's younger brother and his wife, a childless couple. The infant continued to be nursed by her real mother who became known as "Auntie." Her real father became "Big Uncle," and it was against him that her greatest hostility was expressed. Authority in the shape of the family head, though physically more removed, was evidently more oppressive in her Chinese world than the closer presence of an adopted father who was a younger son. At the age of one year, with a wet nurse substituting for "Auntie" and with a new name ("bring along a little brother") the still-unweaned babe was removed from the joint family household and taken to distant Canton where "father" was to be Chief Comptroller in the Governor's yamen. Characteristically, Mrs. Chao writes: "Of my four parents, my favorite parents were 'Auntie' and 'Father.'"

Equally fascinating for comparison with our society are the opposite sex roles imposed at times on Chinese children. A boy child may be given a girl's name at birth and dressed in girl's clothes until the age of five or six, to fool the spirits and thus keep them from harming him. Yet, such treatment notwithstanding, it is highly improbable that a Chinese boy would feel impelled to murder another youngster in order to prove that he was not a sissy—the reason recently put forth by a fourteen-year-old in this country for strangling a companion. And a girl in China, who should from her parents' point of view have been a boy, is not infrequently given a boy's name and dressed in boy's clothes, as was Mrs. Chao until her thirteenth year. Part I of her autobiography is significantly called "Boyhood."

That such changes in sex role are of considerable importance in personality development is clear from Mrs. Chao's story. Yet obviously they do not lead to the types of behavior that would be expected within a Western context. Whatever its parochialisms (and these are largely parochialisms of class), the *Autobiography of a Chinese Woman* gives new insight into certain not-too-frequently exposed aspects of Chinese society.

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The Position of Woman in Early China, According to the Lieh Nü Chuan "The Biographies of Eminent Chinese Women." ALBERT RICHARD O'HARA. (301 pages. The Catholic University of America Studies in Sociology, Vol. 16. The Catholic University of America Press, Washington, D. C., 1945.)

The Lieh Nü Chuan was compiled by Liu Hsiang, famous Confucian scholar of the Former Han Dynasty (206 B.C.–A.D. 9). The *Biographies of Eminent Chinese Women*, as the title is translated, covers a period from legendary times to the days of early Han. It is divided into some eight chapters (*chuan*), seven devoted to women of virtue and understanding, and one, revealingly, to "pernicious and depraved women." Father O'Hara's translations of the 125 biographies (Part I) are carefully annotated, and this reader is most grateful for his approximate datings. Part II first discusses the position of women in Early China from other sources and then analyzes the data of the biographies on this point.

Numerous writers, both Chinese and Western, have commented on the position of women in China, and their opinions are frequently in direct conflict. Father O'Hara draws upon the writings of anthropologists, particularly those of Dr. Lowie and Father Cooper, to underline the many factors involved in evaluating a complex matter of this sort. He points out, for instance, how a lack of understanding of the Chinese principle of *yin* and *yang* (female and male) has led to erroneous conclusions regarding the position of Chinese women. In the light of his own analysis, he concludes: "The general picture of the position of women in early China formed from the data of the *Biographies* agrees with and reinforces the statements of such writers as Florence Ayscough, E. T. Williams, Sophie Ch'en, and especially H. G. Creel; it disagrees with the estimates of earlier writers who placed the position of women in early China at a lower level."

It is evident from the *Biographies* that women in early times, despite a strong emphasis on the *li*, the ways of proper behavior, enjoyed considerable freedom and esteem, much more in fact than they did centuries later. With feet still unbound, some worked in the fields, some, more favored, accompanied their husbands on trips to near or distant places, some refused to marry according to their parents' choice, some advised their mates freely on political and personal matters, some owned substantial property, some not only directed their grown sons, but on occasion reprimanded them severely. It may have been the social ideal, as Mêng-tzu's mother stated, that "the proper conduct of the wife is found in her skill in preparing the five foods, fermenting wine, caring for her husband's parents, making clothes, and that is all." But, as Father O'Hara clearly shows, many of the women in the *Biographies* did a good deal more, and, except for the "pernicious and depraved," with the obvious approval of their fellows.

Illuminating as Father O'Hara's analysis is, it might have been carried somewhat further. Despite the great time-span covered by the *Biographies* (something over 2000 years), and despite the smallness of their number (125), a breakdown of material dictated by certain significant events or circumstances might have been most suggestive. It only needs noting that the *Biographies* stretch over the period that saw perhaps the greatest social and political revolution in Chinese history: the change from a Chinese form of feudalism to a bureaucratic empire. It would have been most helpful to know in how far, if at all, this historic shift was reflected in the *Lieh Nü Chuan*.

More too might have been done with the problems of regional distribution and class.

Equally tantalizing are questions regarding the meaning of survivals in the later biographies and the possible presence of anachronisms in the earlier ones.

That such problems may be posed is testimony to the richness of this early Chinese source. Father O'Hara's translations have made this source in its entirety accessible to Western scholars for the first time. His careful annotations and his discussion are valuable aids for a better understanding of the China of yesterday and today.

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The I-chia of the Liang Mountains. LIN YUEH-HWA. (133 pp., illus., maps. [Text in Chinese.] Sociology Monographs, Ser. B., No. 5. Commercial Press, Shanghai, 1947.)

This book is a report of the findings of an expedition into the Liang Mountains of Szechuan, China, to study a tribe known as the Lolos. They themselves, however, prefer to call themselves I-chia, the word Lolo having acquired a derogatory meaning through misuse by their Chinese neighbors. The expedition was undertaken in the summer of 1943 and lasted 87 days, during which the author investigated the social and economic life of the group and observed many of the patterns of behavior at work. His own experiences with the Lolos are quoted frequently.

The Liang Mountains, which occupy the corner where the provinces of Szechuan, Yunnan and Sikang meet, are divided into the Great Liang Mountains and the Little Liang Mountains. The Great Liang Mountains are exceedingly rugged and almost impenetrable to Chinese and foreign travelers alike. Here the Lolos are on their own territory and, in fact, here they hold many Chinese captives in servitude. The Little Liang Mountains being more accessible, they have become a frontier region where Lolos and Chinese meet and live side by side. When China had a strong government Lolo power retreated into the Great Liang Mountains. When China's strength waned the Lolo enlarged their territory and made numerous raids far into the Little Liang Mountains. The northern part of Yunnan, too, is inhabited in part by Lolos and related tribes, and, in the past, their aristocracy held a strong position in the cities of this region. It is a well-known fact that Lun Yün, governor of Yunnan before and during China's recent war with Japan, is a Lolo by birth.

Linguistically this group is related to the speakers of Tibeto-Burman. They have a script of their own with some resemblance to Sanskrit. Little is known of their history except for the many clashes they have had with the Chinese Empire. It is believed that they played an important role in the Kingdom of Nan-chao, which flourished in northern Yunnan in the 8th and 9th centuries A.D. Aside from some scattered accounts by travelers and missionaries, none of whom visited the Great Liang Mountains, we have no information about the culture of this tribe. The language and writing have been studied by Vial and C. C. Yang, but it remained for the author to study Lolo society in their own territory.

Lolo society is composed of three classes:

(a) The Black tribesmen, who form the ruling aristocracy and are occupied with feuding, raiding, and with keeping the other two classes in line.

(b) The White tribesmen, who for the most part are descendants of Chinese cap-

tives. They owe allegiance to the Black Lolo chief in their neighborhood and have many services to perform for him, even though they own property.

(c) The Wa-tzu are the enslaved captives brought back by the Black Lolo from raids into Chinese villages. They work for their masters and can be sold like chattel.

Since the Wa-tzu become White Lolo after a few generations there is a constant crossing of class lines between these two groups. But the Black Lolo form a caste by themselves and severely punish intermarriage of their members with the lower classes. This social system is well described in Chapter 7 of the book.

Chapter 2 gives a good account of the organization of and the relations between the ruling Lolo sibs. The headmen are always men of great courage and ability who have distinguished themselves in feuds and raids. Each sib lives in its own territory. A feud may be started by the refusal to pay blood-money or by disputes concerning White Lolo and slave families, or it may be inherited and carried on for generations. Such sporadic fighting makes traveling hazardous, and anyone passing through the territory of one sib has to ask the permission of the local chief, who provides him with an escort to the border of the next sib. The feuds, carried on in the old days with bows, spears and full-dress armor, were accompanied with a great deal of display. In these days of the quick-shooting rifle, fighting has lost some of its glamor.

Three chapters are devoted to the kinship terminology, family organization and marriage. The kinship terms show the influence of cross-cousin marriage, which is entirely borne out by their regulations regarding marriage. As mentioned, the classes are endogamous, but the sibs are exogamous. Widows are usually married to younger brothers of the husband. The young people are permitted a great deal of freedom before marriage, but the marriage partner has to be selected by the parents. On the fourth day after the wedding the bride returns to her parents' home and lives there, enjoying complete sexual license in the absence of her husband until the birth of her first child. Then only does the couple take up patrilocal residence.

The priest, or *pi-mo*, occupies an important place in Lolo society. He functions as diviner, or as medicine-man, exorcizing the evil spirits which are believed to cause disease. He recites spells and practices black magic to kill the enemies of his sib, an accompaniment of the feuds. He also conducts the ceremonies which guide the souls of the deceased into their proper abode in the other world. The long chants of the *pi-mo*, which contain a great amount of their mythology and religious beliefs, have been collected and published by V. K. Ting, but they still await translation and interpretation.

In Summary, this book is a valuable contribution to the knowledge of a tribe which has maintained its culture intact to the present day. The author shows great keenness in collecting actual data to relate to the behavior patterns he investigated. Unfortunately, certain aspects, such as the life cycle, and particularly child training, have not been treated in much detail. Perhaps the reason is to be sought in the shortage of paper, which, as the author states in his preface, limited the size of the book. As the guest of the important men in each sib the author's contacts were mainly with the aristocracy. So we have to assume that his account applies, in the main, to the upper class, and that the other two sub-groups will yet have to be studied.

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Malay Fishermen: Their Peasant Economy. R. FIRTH. (xii, 354 pp., 18 tables, 27 figures. Kegan Paul, Trench, Trubner and Co., Ltd., London, 1946.)

This compact, highly documented study, filled with the precise detailed observation which always marks Dr. Firth's field work, is an extraordinarily contradictory piece of work. Dr. Firth contends in preface and appendix that it is of the utmost importance for the understanding of economic processes and for the regulation of orderly change in native economies that these economies should be studied by anthropological methods, and the results of such studies integrated with any governmental plans for change. He further raises the theoretical question as to whether the categories of contemporary western economics can be useful in analyzing peasant and primitive economies. The body of the book is then concerned with the most precise and careful study of the fishing industries of selected groups in Malaya, each detail of organization, of trade, of distribution, of the selling price of a day's catch is recorded with full recognition of the cultural whole within which these activities labelled "economics" are taking place. But in the end we are left no wiser than we were before about the usefulness of the categories themselves or the ways in which it would be necessary to modify them if genuine cross-cultural communication is to take place. The descriptive body of the book is simply quite beautiful ethnographical work which concentrates on aspects of a fishing peasant economy which have never claimed the work of an ethnologist before.

The study provides valuable comparative data which can be used in studies of fishing elsewhere in the area, and it can be used as a basis for governmental planning. But, here as in the theoretical problem of the use of economic categories which Dr. Firth raises, there is a distinct break between the magnitude of the problems raised, and the method by which the wealth of data is presented. As a model on how to make vivid a detailed study of one aspect of culture, it should provide excellent teaching material.

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PHYSICAL ANTHROPOLOGY

Anthropologia Helvetica. OTTO SCHLAGINHAUFEN. (A., Textband; B., Atlas. Vol. 21, Arch. d. Julius Klaus—Stiftng. f. Vererbfschg., Sozialanth. u. Rassenhyg. Pt. A, 699 pp., 499 tables, 144 figs. Pt. B, 161 diagram-maps, 16 pls. [with 504 face and profile views]. Art. Inst. Orell Fossli A-G., Zurich, 1946.)

Anthropologische Untersuchungen in Bezirk Untertoggenburg. F. C. BÜCHI. (Arch. d. Julius Klaus—Stiftng. f. Vererbfschg., Sozialanth. u. Rassenhyg. 17 [3–4]: 125–412. 302 tables, 41 figs., 8 pls. Zurich, 1942.)

Yearbook in Physical Anthropology. G. LASKER (Ed.) (2 Numbers, 1945 and 1946, 214 pp. and 242 pp., resp. Viking Fund, New York, 1946–1947.)

Timor Português, Contribuições para o seu Estudo Antropológico. A. A. MENDES CORRÊA. (Repub. Port. Minist. das Colon. Memórias, sêrie antropológica e etnológica. 237 pp., 51 pls., 3 maps. [English resumé, pp. 179–215.] Lisbon, 1944.)

Contribuição para o Estudo da Antropologia da Moçambique. Algumos Tribos do Distrito de Tete. J. R. DOS SANTOS, JR. (Repub. Port. Minst. das Colon. Memórias, sêrie an-

tropolôgica e etnolôgica. 416 pp., 73 pls., 204 figs., 12 tables. [French and English résumés in separate accompanying volume.] Lisbon, 1944.)

Gorilas do Maiombe Português. HUGO DE MAGALHÃES. (Repub. Port. Minst. das Colon. Memórias sêrie zoolôgica. viii, 155 pp., 32 pls. [English resumé, pp. 131–141; French resumé, pp. 145–155.] Lisbon, 1945.)

Professor Schlaginhaufen's study is truly magnificent, destined to rank as an example of careful racio-national analysis. It is based on the detailed study of 35,511 Swiss army recruits. Here are the most vital data (in mm.): stature, 1685.6; head length, 189.00; head breadth, 153.50; CI, 81.31; morphological face height, 122.2; bizygomatic breadth, 136.7; FI, 89.45; nasal height, 53.8; nasal breadth, 33.7; NI, 62.95. Nose is straight in 53.06 %; occiput is rounded in 64.15%; hair is straight in 80.14%. Eye color is brown in 27.32%, mixed in 47.21%, light in 25.14%. Hair is blond (Fischer-Saller A to O–P), 30.64%, brown to brown-black (P–Y), 63.32%.

Professor Schlaginhaufen makes a significant contribution to the reality of race-type existence. He analyzes his data according to trait-combinations presumably diagnostic of certain European races. He finds representation only according to the following percentages: Nordic (*H. Europaeus*) 1.571%; East European (*H. Vistulensis*) 0.285%; Ibero-Insular (*H. Mediterraneus*) 0.615%; Alpine (*H. Alpinus*) 1.41%; Littoral (*H. Atlanto-Mediterraneus*) 2.47%; Dinaric (*H. Adriaticus*) 2.31%. In other words, 91.339% of the Swiss studied are mixture-products of the six European races noted above. Even the most frequent trait-combination for the Swiss—tall, mesocephalic, leptoprosopic, leptorrhine, mixed eye-color, and brown hair—occurs in only 1.77%.

Büchi's report is one of the thorough physical anthropological studies of Swiss cantons carried out under Professor Schlaginhaufen. There were studied 683 persons in seven localities (178 M under 20, 207 M over 20; 197 F under 20, 101 F over 20; age-range 6 years to 60 years +). The following data are pertinent (in mm.): Stature, 1652.4 (M), 1555.1 (F); head length, 190.07 (M). 180.92 (F); head breadth, 157.44 (M), 151.55 (F); CI is brachycephalic (82.89 M, 83.82 F). Occiput in M is straight in 38.6%, rounded in 55.5%. The FI is 86.77 (M), 83.32 (F); the NI is 66.39 (M), 64.83 (F). Head hair in M is 61.0% brown-black, 33.6% brown, and 5.5% blond. In F the percentages are 68.8%, 24.7%, and 6.5% respectively. Eye color in M is 27.7% light, 48.0% mixed, 24.3% brown. In F the percentages are 19.8%, 48.5%, and 31.7%, respectively. The population studied is concluded to be mixed. Basic is the Alpine (M 25.7%, F 26.9%). Then, Mediterranean (5.8%, 4.5%), Nordic (4.1%, 4.5%), Dinaric (2.5 %, 4.5%). These are all stated to be "pure" types on the basis of trait-combinations. All others are mixed. No trace of an East European type was found in the sample studied.

The 1945 and 1946 *Yearbooks* represent a welcome and most useful bringing-together of articles on human biology which have previously appeared in relatively inaccessible publications. An idea of the fields covered (and the frequency of reference) is given in a summary of the two volumes: Primate and human osteology, 11; human paleontology, 6; human and comparative physical growth, 6; primate and human dentition 5; two each for craniology, serology, pigmentation, and bio-social aspects of physical anthropology; and one each for the speech apparatus, body type, hair, nose, heredity, classification (as a principle), the primate brain, neuroanatomy, and physiology. These volumes are especially useful in smaller insitutions where extensive library facilities are not available. To the student in physical anthropology specifically, and in anthro-

pology generally, the Viking Fund has made it possible to keep abreast of current literature in related and adjacent biological fields.

Mendes Corrêa first offers a history of the discovery of Timor and of its scientific study. The report is based on 107 Timorese studied by Cardoso at Ocussi and Ambeno, 14 Beloenese who came to Oporto in 1933 and 1944 (8 M, 6 F), plus photographs of 246 M and 294 F taken by Fontoura. On the basis of Cardoso's material it is concluded that "the population is more mixed on the sea-coast than on the mountainous island." The basic type is yellow-brown skin, wavy dark-brown hair, dark eyes, broad face, smooth skin, straight nose, more or less flattened, moderate prognathism, moderately thick lips, and prominent cheek-bones. Stature averages 1588 mm. on the sea-shore, 1589 mm. in the mountain areas. The CI is 82.4 and 83.1 respectively, and the NI is 81.9 and 88.4 respectively. Mendes Corrêa sees "no valid reason to link them [Timorese] with the Melano-Papuan branch, nor to the Mongoloid branch, but rather, in a much higher degree, with the so-called Indonesian type." From the photographs he deduces additional Proto-Malay, Deutero-Malay, Veddo-Australoid, and Melanesoid elements. There is a brief discussion of Timorese linguistics, demography, psychology, and ethnography.

In a chapter on "Systematical position of the Indonesian in general and of the Timorese in particular," Mendes Corrêa offers an excellent analysis of race biology with a strong genetic slant. By mutations he derives from a basic Veddoid-Australoid element first the Tasmanian and Australian; secondly the Negrito, Melanesian, and Papuan; thirdly the Dravidian or Indo-Melanids and the Europoids; and "at last the Proto-Malays, from which would proceed the Deutero-Malays, Polynesians, and Pareoean or Mongols." He then goes on to say, "but the third branch might also be a specialization of the Proto-Malay, if this one itself did not happen to be the initial archtype instead of the Veddo-Australoid." I read this chapter very carefully, but his final hedging rather spoiled the otherwise cogent reasoning.

The volume by dos Santos is a very thorough all-round study. It is based, on the physical side, on the following tribes: Nhûngüès (120 M, 46 F); Antumbas (20 M); Chicundas (20M, 20F); Sengas (27 M); Sereros (31 M); Atandes (20 M, 20 F); Tanaras (31 M); and Demas (10 M). The author devotes his earlier chapters to general historical, demographic, geographical, geological, climatological, faunal, floral, and ethnographic considerations. His principal conclusions are with reference to physical anthropology. In Summary Tables A, B, C, he presents certain descriptive observations, dimensions, and proportions of two main groups, Nhûngüès and Antumbas. He concludes that "descriptive characters are of a greater discriminating value for the comparative study [of the two groups]." Nhûngüès traits are as follows: skin color, 45% of von Luschan's #30, 35% of #32; hair color, 54.2% of Fischer-Saller's X; eye color, 67.5% of Martin's #2; nose bridge, 75% broad; ears, 77.5% "flapping"; beard, 47.5% rare. Antumbas traits are: skin color, 41.4% of #25; 31% of #30; hair color is 66.7% of X; eye color is 48.3% of #2; nose bridge is 89.7% broad; ears are 69.0% "adjacent"; beard is 41.9% "middle." The N. are 1679.7 mm. tall and weigh 57.94 kg.; the A. are 1649.3 mm. tall and weigh 55.15 kg. The CI of the N. is 72.30, that of the A. 73.65. The author concludes that the tribes studied show "the prevailing characteristics of the so-called Bantu race." He connects the tribes with what he calls the "Negro race" per se and the "South African sub-race (Bantu, Neo-Negrid, or Kaffrid)." There is a good discussion of the problems of the heterogeneity of the peoples lumped as "Bantu."

The report by de Magalhães is based on the study of seven adult *Gorilla gorilla* (5 M, 2 F) and one foetal specimen from Mayombe (Cabinda Territory, Port. W. Africa). After an historical account of the Gorilla and a brief consideration of living-habits in the wild and in captivity, there are presented craniological and osteological data, together with a discussion of external morphology. For the most part the article consists of comparing the present cranial and skeletal findings with those of other workers, notably Coolidge, Oppenheim, and Schultz. There is a good discussion of techniques in Primate craniometry.

The reviewer would like to go on record as registering his appreciation of the splendid work being carried on by colleagues in the European and African fields. To Professor Schlaginhaufen we owe much for his careful analysis of a single population. To Professor Mendes Corrêa we record acknowledgment of his efforts to acquaint colonial authorities with the bio-social problems with which they must cope.

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MISCELLANEOUS

Sexual Behavior in the Human Male. ALFRED C. KINSEY, WARDELL B. POMEROY, CLYDE E. MARTIN. (804 pp., 173 charts, 159 tables, $6.50. W. B. Saunders Co., Philadelphia and London, 1948.)

This is an objective analysis of the sexual acts of about 5300 white American men as revealed in standardized interviews, most of which were conducted by the three authors. The questions asked of the data are biological, psychological, and sociological. The volume is sophisticated from the anthropological (i.e., comparative) point of view, and considerable anthropological literature is cited.

In the space allotted to this review, a thorough survey of this rich book is impossible. Discussion will therefore be restricted to matters of method. However, the anthropologist should realize that the substantive content constitutes an almost inexhaustible storehouse of materials upon various aspects of American culture and for studies in comparative human biology.

Professor Kinsey, the senior author, is a well-known biologist and the basic conceptions and techniques are taxonomic in the sense in which contemporary biologists employ this term:

> Modern taxonomy is the product of an increasing awareness among biologists of the uniqueness of individuals, and of the wide range of variation which may occur in any population of individuals. The taxonomist is, therefore, primarily concerned with the measurement of variation in series of individuals which stand as representatives of the species in which he is interested. (p. 17)
>
> The experimentalist creates the backgrounds and controls the environmental factors which are the suspected agents of his results. The taxonomist finds the different backgrounds where they are already established in nature and, if his investigation is accurate, can reason as the experimentalist does about causal factors. (p. 18)

In each case history 521 different items were explored in an interview lasting from one and one-half to two hours, but, since not every subject had experienced each sort of activity, the actual number of items covered in the usual case was about 300.

Dr. Kinsey and his collaborators were fully aware of the stratified and segmented nature of the American population. They therefore rejected pin-point sampling, factor analysis and the like in favor of procedures primarily oriented to adequate statistical description of distinctive sectors of the population. They established a twelve-way breakdown: sex, race-cultural group, marital status, age, age at adolesence, educational level, occupational class of subject, occupational class of parents, rural-urban background, religious groups, religious adherence, geographic origin. Each of these categories is further subdivided into two to eighteen subdivisions. If all of these sub-groups were combined in all possible combinations to secure complete homogeneity for all factors, the theoretic number approaches two billion. It is obvious that so complete an analysis is as unnecessary as unfeasible. In the present study 163 samples were used. These were homogenized for sex, race, marital status, age, educational level, and either the rural-urban background or the religious background of the individual. Randomized samples of 50, 100, 200, 300, 400, and, when possible, 600, 1000, and 1500 cases were selected directly out of the total population. It was found that 300 was for most purposes an optimal figure. On most statistics two-thirds to three-fourths of all samples of 300 gave results substantially identical with those obtained from the largest possible samples.

At present some 12,000 case histories have been obtained. The data on women and American Negroes have been utilized in the present volume for certain statistical investigations as well as for general background to the study. The authors consider that a total of 100,000 subjects will be necessary to complete the study. The aim is to obtain more or less equal samples from each of the ultimate groups, regardless of the relative size of these groups in the total American population. In other words, the authors prefer stratified sampling to representative sampling.

The impossibility of securing a strictly randomized sampling from the total American population under existent conditions of cultural prejudice and other difficulties of field work is honestly faced. The best possible alternative is taken to be that of obtaining a hundred per cent sample from each social unit from which any individual is drawn. Twenty-six per cent of the 12,000 cases now at hand have come from the following hundred per cent groups: sororities, fraternities, college student groups, college classes, college rooming houses, professional groups, conscientious objectors, NYA project, junior high school classes, speech clinic groups, town rooming houses, hitchhikers, delinquent institutional groups, penal institutional groups, mental institutional groups. There is a careful comparison of complete and partial samples and of the problem of controlled partial sampling.

The chapter on interviewing will command the respect of every anthropological field worker, even though he may encounter some statements that do not correspond to his own experience. There are many excellent technical points, and one could wish that at least one anthropologist had published his procedures with comparable clarity and systematic quality. While sympathizing with the unwillingness of the authors to extend the range of subjects covered, anthropologists may question the assertion that the lengthening of an interview by even ten minutes would reduce the quality of the intake. Anthropologists are also likely to wonder whether more sustained contact with subjects and repeated interviewing might not make a tremendous difference. However, a scrupulous analysis of re-takes, study of pairs of histories from spouses, and other

cross-checks indicate that the validity of the data obtained is remarkably high on the whole.

In general, the reviewer can only express high admiration for the scientific integrity of this study, for its technical ingenuity, and theoretical and statistical acumen. However, a number of questions must be raised. Of the more detailed kind one may serve as illustration. The basis of differentiation between the "professional," "business executive," and "extremely wealthy" groups does not seem altogether clear and convincing. The authors might have been wiser to use some modification of the Warnerian "lower-upper" and "upper-upper." More basic questions involve the nature of the sample obtained thus far. It is stated that only three or four of the 12,000 cases have failed to complete their history. However, the reviewer was nowhere able to find figures on the number of persons who had in some degree been approached but who refused to begin the interview. Although the number of one hundred per cent samples is impressive and indeed astonishing, the reader would know better where he stands if he were given full statistical information on all unsuccessful approaches. The authors properly express some reserve on the one hundred per cent sample as a substitute for completely randomized sampling, but the reviewer would emphasize this reservation even more strongly. As in the studies of W. H. Sheldon and his associates on somatotypes, entirely too large a fraction of this project to date has been carried out among college groups, though this objection has less force than if the technique involved were representative instead of stratified sampling. And, granted that five hundred and twenty-eight different colleges were sampled, it still makes a great difference *which* college populations were selected. Even though further sorting on the basis of religious adherence, economic level, rural-urban background, etc., makes for correction, it still—as in any classification—is significant whether you start with Wheaton College (Illinois) or with Yale or Brooklyn. There is a real danger that the deficiency of non-college, Catholic, rural, and other groups will result in misunderstandings on the part of those who do not understand stratified sampling. The inclusion of so many psychologists and psychiatrists, and of so many male prostitutes is also likely to warp the picture for even the scientific reader.

Whether or not all major problems have been satisfactorily solved, this is truly a magnificent beginning of a most important research. The authorities of the University of Indiana, of the National Research Council, and Dr. Alan Gregg of the Division of Medical Sciences of the Rockefeller Foundation deserve the thanks of all scientists for backing this venture in the face of our culture.

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Glacial Geology and the Pleistocene Epoch. RICHARD FOSTER FLINT. (535 pp., 6 plates, 88 text figures, bibliography and index, $6.00. John Wiley & Sons, Inc., 1947.)

Dr. Richard Foster Flint, an authority upon Pleistocene glaciation, is Professor of Geology at Yale University, and Chairman of the Committee on the Interrelationships of Pleistocene Research of the National Research Council. His book constitutes the most thorough treatment of the Pleistocene since Daly's *Changing World of the Ice Age* and for that reason is of significance to the prehistorian as well as to students of the

earth sciences. The volume contains an excellent introduction to the history of glacial concepts and comes right down to the present with a critical treatment of G. C. Simpson's hypothesis as to the causes of glaciation—something lacking in most other works on the subject. Both the American and European ice sheets are discussed, as well as glaciated areas outside North America and Europe. The swinging sea-level and the fossil record are adequately treated and the book bears ample evidence of the painstaking application as well as brilliant synthesis which has gone into its production.

The subject of land bridges and mammalian migration might have been, perhaps, a little more adequately treated by reference to George Gaylord Simpson's studies in that field, but the emphasis is, naturally, geological, and compression is demanded to get the major points of this vast and sprawling subject into the covers of a single book. The fact is that there is not a single major area of the world upon which Flint's work does not cast new light or raise further problems for the discerning student of prehistory. No archaeologist can read the volume without feeling within himself the stimulus created by a first class scientific mind, nor without sensing the urge to utilize its body of beautifully organized data in the examination of human problems which lie outside the realm of pure geology.

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[1] These lists of recent Japanese publications were compiled for the *American Anthropologist* by Herbert Passin, Tokyo, Japan.

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BRIEF COMMUNICATIONS

COMMENTS ON THE STATEMENT ON HUMAN RIGHTS[1]

When the Executive Board was instructed to draft a "Statement on Human Rights," it was, I believe, generally understood that any political stand or value judgment should be avoided. The Board has obviously made every effort to limit the Statement to scientifically supportable assertions, but it seems clear now that it was asked to do the impossible. I am led to this conclusion not only by my own thinking, but by discussions which I have heard.

If the plea that cultural values be respected means merely that the primitive peoples, who are on the receiving end of civilizing influences, be treated with greater understanding and tolerance, there can be little objection to it. To be universally valid, however, the Statement must apply equally to the cultural values which underlie the internal policies and motivate the foreign affairs of the civilized nations. I should doubt that, in urging that values be respected because "man is free only when he lives as his society defines freedom," we really mean to approve the social caste system of India, the racial caste system of the United States, or many of the other varieties of social discrimination in the world. I should question that we intend to condone the exploitation of primitive peoples through the Euro-American system of economic imperialism, while merely asking for more understanding treatment of them: or, on the other hand, that we are prepared to take a stand against the values in our own culture which underly such imperialism.

As "respect for cultural differences" certainly does not advocate tolerance of the values in Nazi Germany, where the "individual . . . [realized] his personality" through the Youth movement, a qualification is introduced (p. 543) that seems to contradict the basic premise and to be incompatible with anthropological thinking. "Even where political systems exist that deny citizens the right of participation in their government, or seek to conquer weaker peoples, underlying cultural values may be called on to bring the peoples of such states to a realization of the consequences of the acts of their governments, and thus enforce a brake upon discrimination and conquest." This may have been a loophole to exclude Germany from the advocated tolerance, but it looks to me like the fatal breach in the dyke. Either we tolerate everything, and keep hands off, or we fight intolerance and conquest—political and economic as well as military—in all their forms. Where shall the line be drawn? As human beings, we unanimously opposed the brutal treatment of Jews in Hitler Germany, but what stand shall be taken on the thousands of other kinds of racial and cultural discrimination, unfair practices, and inconsiderate attitudes found throughout the world?

What are these "underlying cultural values" that can be used to suppress intolerance and promote political freedom in cultures which lack economic or social freedom, or that can be used to halt conquest in a competitive world? Even if there were agreement on objectives, it would take some pretty fancy handling to revamp the portions of cultures which are disapproved. I had thought that anthropologists, of all people, stressed the interrelatedness of cultural values and patterns.

Without committing itself to particulars, the Statement is a value judgment any way it is taken. If it does not advocate tolerance for *all* cultural values, no matter how

[1] *American Anthropologist*, n.s., 49, pp. 539–543, 1947.

repugnant some of them may be to us as individuals, then it must imply disapproval of *some* cultural values, though it also says that we have no scientific basis for making any value judgments.

The conclusion seems inescapable that we have gotten out of our scientific role and are struggling with contradictions. During the war, we gladly used our professional techniques and knowledge to advance a cause, but I hope that no one believes that he had a scientific justification for doing so. As individual citizens, members of the Association have every right to pass value judgments, and there are some pretty obvious things that we would all agree on. As a scientific organization, the Association has no business dealing with the rights of man. I am sure that we shall serve science better, and I daresay we shall eventually serve humanity better, if we stick to our purpose. Even now, a declaration about human rights can come perilously close to advocacy of American ideological imperialism.

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ON SCIENCE AND HUMAN RIGHTS

In a recent issue of the *Anthropologist*[1] there appeared a copy of the "Statement on Human Rights" authored by the Executive Board of the Anthropological Association and submitted to one of the commissions of the United Nations. In taking this action the Board has exhibited initiative of the sort that was contemplated when the question of the reorganization of the Association was first conceived and discussed. It is to be commended for its energy and alertness, and for accepting the responsibility of forwarding the interests of the Association. It is unfortunate, however, that the first major commitment of the Association should take the form that it has. The document submitted to the United Nations is likely to have an effect the opposite of that which was intended; and, in any event, it places the Association on record in a way that embarrasses its position as a scientific organization. It would be regrettable if it were to establish a precedent.

The import of the Statement is that anthropologists, as trained students of human relations who maintain a disciplined attitude toward their materials, have something scientific to say about the requirements for a charter of human rights. Unfortunately this is not so; and the reason is as obvious as it is well known; namely, that there is no scientific approach to the question of human rights, nor to any other problem that calls for an appraisal of human relations in terms of some absolute value system.

Any right, even the "right" to live, is such only by definition. It is contingent upon some presupposition, no matter how vaguely or precisely this may be appreciated, nor how restricted or universal is its application. Within the areas of their acceptance such presuppositions are regarded as absolutes by the people who adhere to them. They define the good, the true, and the proper; and individual behavior is measured, i.e., valued, in terms of the ultimates that they set up. It is the business of the social scientist to record the existence of these value systems, and to study them in all possible ways. It is not his business, *as a scientist*, to adopt the point of view of the

[1] *American Anthropologist*, n.s., 49, pp. 539–543, 1947.

people he studies and declare for the superior merits of the values of any one of them. And since anthropologists aspire to an objective study of our culture along with the rest, and reiterate that it must be treated only as one among many, this detachment with respect to our value system is imperative if we are not to lay ourselves open to charges of bias along with the rest of humanity.

It should not be necessary to remind anthropologists of these elementary precepts in our training, and some may resent my impudence in presuming to do so. There is, nevertheless, a need for such a reminder. There is a growing tendency among anthropologists at the present time to subscribe wholeheartedly to the precept of complete objectivity in the abstract and to violate it in practice. This is especially true in these days when glimpses of the practical uses of our data spur us into unexplored areas. All too frequently nowdays we find the anthropologist assertedly making a scientific study of a social situation and yet making recommendations about what "should" be done to remedy its "defects." Too often we find the anthropologist who has analyzed the culture of a people assuming that he knows what is "best" for them. This, in fact, is a common occupational disability. The line of reasoning is not easy to follow, but it is clear what has happened in such cases: the observer, as a result of his knowing a great deal about a people, comes to believe that he also knows what is "good" for them. Upon reflection it must become obvious that there is no necessary connection between a knowledge of the facts of a people's existence and judgments about the significance of those facts based upon some necessarily arbitrary scheme of values. Proficiency in the one has no bearing upon expertness in the other. An intimate knowledge of a people throws no light upon their "needs"—except by virtue of reference to some standard which must always be assumed to be valid in itself, and which is therefore not dependent upon any scientific findings. And since goods are a matter of convention or convenience only, the anthropologist is no more qualified to make decisions about them than is the executive or the administrator; and he would do well not to jeopardize his professional standing by pretending that he is. In other words, the worth or propriety of human motivations and goals is a matter of opinion, adjudication, and policy; whereas the question of the means that are employed, or that can be employed, to achieve these pre-determined goals is amenable to objective analysis and can yield, some day we hope, a foundation for prediction.

It is an inescapable fact that we cannot at the same time be moralists (or policy makers) and scientists. We all know this; we teach it and practice it—except in the pinches when our private or group interests and prejudices become involved. Then, unhappily, we behave like any undisciplined layman—except that, having more resources at our disposal for rationalization, we are more adept at defending our preconceptions. The Statement on Human Rights is a case in point, and because of the seriousness of the criticism I would like to point out specifically why this is so.

The problem, as stated in this document, is: "How can the proposed Declaration [on the Rights of Man] be applicable to all human beings, and not be a statement of rights conceived only in terms of the values prevalent in the countries of Western Europe and America?" It is difficult to see how the discussion that follows is believed to throw any light on the solution of this difficulty. On the contrary, the facts and "principles" that are offered, when viewed objectively, reveal the confused thinking that commonly accompanies such attempts, and contain within themselves the refuta-

tion of the basic proposition that is advanced as a solution. Thus, the third "principle" states: "Standards and values are relative to the culture from which they derive so that any attempt to formulate postulates that grow out of the beliefs or moral codes of one culture must to that extent detract from the applicability of any Declaration of Human Rights to mankind as a whole." Most of us, I believe, can subscribe to this. But what is the conclusion to be drawn from it? For a proposition to lead anywhere there must be a second premise, in this case one involving the basic argument of the authors of the Statement, which is that "man is free only when he lives as his society defines freedom." Surely it must be realized that this concept is a value or a standard that is relative to American tradition. There are a great many people in the world to whom it is not a self-evident fact; and it certainly is not a discovery of science. The conclusion must follow, then, that an attempt to include this postulate in a Declaration on the Rights of Man detracts by so much from the applicability of the declaration to mankind as a whole. Thus, the Statement unwittingly sets up what it aims to attack, namely an absolute in the carnival of values.

The confusion of values with facts in the first and second "principles" makes them ironical in a context that decries the widespread tendency to evaluate differences in cultures. Regardless of our sympathies it must be admitted that these sentences do no more than rationalize a certain point of view. In each instance the "principle" contains a fact that is carried off into the realms of casuistry by a purely verbal linkage with a humanitarian ideal. Thus we can show proof, as the first "principle" implies, that "the individual realizes his personality through his culture." But what researches have shown that "respect for individual differences entail a respect for cultural differences?" If anything, research would probably show the opposite. Obviously, the only meaning this part of the statement can have is that *if* one has respect for individual differences then one *should* have respect for cultural differences. But this has nothing to do with science, and requires an additional premise to meet the requirements of logic.

Much the same can be said of the second "principle." The fact that we cannot qualitatively evaluate cultures in no way calls for the conclusion that this "validates" respect for differences between them. The most that can be said is that *if* respect is due all things that cannot be differentiated then it is due all cultures. But in any event, respect is a measure of value, and science knows no means of determining when and where it *should* function, only when and where it does. Beyond that the philosophers take over.

It is disturbing to find a document of this sort resting upon such a shaky foundation of hidden premises. Only that fact can account for the evaluative descriptions of certain historical situations (e.g., "disastrous for mankind," "demoralization of human personality," etc.); and for such otherwise meaningless statements as: "There can be no full development of the individual personality as long as the individual is told, by men who have the power to enforce their commands, that the way of life of his group is inferior to that of those who wield the power." No matter how we may feel about the situation, it can hardly be denied that the individual Javanese or Samoan, for instance, has a fully developed personality—unless the definition of "full development" rests upon some arbitrary premise that excludes these cases.

The weakness that is inherent in all evaluative approaches to social problems—those that involve preconceptions of what is "good" or "bad" for a people—is evident

in the third from the last paragraph of the Statement. In it the question of totalitarian states and their obscurantist policies is raised, and advised upon, apparently without embarrassment, although the doctrine of cultural self-determination, advocated throughout the rest of the argument, seems to suffer in the process. To quote: "Even where political systems exist that deny citizens the right of participation in their government, or seek to conquer weaker peoples, underlying cultural values may be called on to bring the peoples of such states to a realization of the consequences of the acts of their governments, and thus enforce a brake upon discrimination and conquest." In other words, there should be a limit to the application of the doctrine of cultural laissez-faire. The United Nations are advised to allow free choice in cultural, hence individual, development unless a people choose to reject the ideal of individual freedom, an eventuality that we Americans can conceive to happen only because of ignorance. This is, of course, the ultimate dilemma of democracy; but that is no reason why anthropologists should throw themselves on its horns with a "scientific" solution.

At this critical point in the career of the Association it is fitting and necessary for us to take stock of ourselves as professed scientists. We should each of us, and all together, get our bearings and decide where we are going. That much at least can be expected of us immediately. To date our performance in the field of cultural anthropology has not been very promising. We can do an excellent job of reporting and analyzing, but beyond that we are, as a group, badly confused. In our factual accounts we are exacting and tireless in our efforts to be exhaustive and accurate; but in our entirely understandable wishes to put our knowledge to practical use we too often forget that there is a fundamental distinction between social engineering and social planning, between recommending means and recommending ends. And as long as we cannot ourselves divorce our opinions from our facts we cannot expect others to take us at face value as scientists.

We need to do some thinking on this matter before we further commit ourselves on an action program. We cannot afford to jeopardize what little scientific repute we have by advocating predilections disguised as universals. For one thing, the sequel is more than likely to prove us wrong; and, for another, people of all degrees of sophistication will still prefer their opinions to ours despite the quantities of "evidence" that we can bring to bear. If we must support proposals and movements—and I believe that the Association should at times do just that—then let us admit, either tacitly or explicitly, that we have an axe to grind and dispense with the camouflage. Above all, let us not delude ourselves that in defining the right, the true, and the just we are building upon "the firm foundation of the present day scientific knowledge of Man."

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WILL WEST LONG, CHEROKEE INFORMANT

Will West Long of Qualla Reservation, western North Carolina, died of a heart attack, March 14, 1947, at the age of 77. Will's knowledge of Cherokee culture and his ability in the interpretation of the Cherokee language were second to none, and he had participated in almost every study of either subject pursued during the past sixty

years. His life spanned the period of most intense culture change and social unrest among his people, and his death leaves me with a sense of opportunity neglected and data lost; a great body of information and an extremely interesting and significant series of observations on white and Cherokee cultures and their interaction died with Will. A long chain of friendships with scholars, artists, and interested persons and his vital, if inconspicuous, role in reservation affairs testify to his unusual character and abilities. It is unfortunate that no student of the ethnology of the Eastern Woodlands had been able to marshal sufficient resources, interest, or time to fully utilize the opportunities that Will (and some of his contemporaries) offered for a good knowledge of Cherokee culture.

Will West Long, 1946

Wɑli' westi' was born in the Big Cove, one of the most marginal and conservative of Indian communities, fourteen miles from the nearest road. Big Cove was a composite town made up of the most conservative mountain Cherokee families from several settlements who hid in impenetrable back-country areas when the Cherokee were "removed" in 1838. Will grew up surrounded by men who had seen the Georgia Militia seize their homes and who had escaped from the stockade just west of the present Bryson City. His people were among the individuals who had each contributed a five dollar gold piece to purchase the present reservation as communal land. His friends included such men as was 'into·ni' (Washington), who, as a child, had seen his father, a hostage, executed by the Georgia troops, and who himself died on the peak of Roundbottom and was eaten by wild hogs. Will had sheltered and protected Indians pursued

by the murderous aggression of neighboring Mountain Whites. The history of the Big Cove is badly bloodstained, but there was no violence in Will, nor in many of his fellow Cherokee. He represented the philosophical Indian who lived in times that he felt were no part of him.

Although Will was the son of a Cherokee Baptist preacher, John Long, the household in which he was raised was a conservative social unit of pagan Cherokee tradition, in which aboriginal patterns of economy and the whole Cherokee supernaturalistic philosophy were still of very real significance. His first schooling in Cherokee culture came from his mother, Sally Terrapin, and her brother, and this early training shaped a personality which was enriched but little altered in essentials by all of his later experiences. Will once spoke of the gifts which he made to his maternal uncle, and of the stock of information and magical procedures with which his uncle reciprocated. His cousin, Charley Lawson (lω'si') taught him how to carve masks and began to teach him the traditional songs. Later Will turned to his half-brother and other older men of his own clan as teachers, and finally to almost any well-informed member of the community, but this was after his sojourns away from the reservation.

When Will was sixteen years old he was sent off to Old Trinity College near High Point, Randolph County, North Carolina. He spent several lonely months here, and then he ran away for home, hiding and sleeping during the daytime and walking at night. After a short time on the reservation he returned to school and spent about a year there. Unlike most Cherokee of his generation who had learned to read the Bible in Cherokee, he could not read or write Sequoyah's syllabary. An older Cherokee schoolmate from Tennessee befriended Will and taught him the Cherokee alphabet. Here Will also learned to read and write English, and apparently began to manage the exact, if sometimes quaint, English forms of the professional translator.

When Will returned to his mother's household at Qualla he settled down to chores and farming. His industry, steady ways, and intelligence apparently attracted some attention, and he began to gain some knowledge of the conjurors' books with their written prescriptions, charms, and formulas. The white man's world had begun to seem quite attractive to Will, and he felt shut off from opportunities offered by the money-minded alien culture. Such store goods as coffee, nails, sugar, tea, and factory-made shoes had only recently appeared at the first store at Smokemont, and calico and Kentucky blue jeans cloth had replaced buckskin and homespun woolens. Lumbering and wood chemical industries were moving into the mountains, and the isolation of the Big Cove would soon be ended.

When James Mooney first came to Cherokee in 1887, he had been attracted to Will and hired him as a scribe, set him to work copying manuscripts in the Cherokee syllabary, and was soon using him as an interpreter. Mooney encouraged Will to go off to school. A few years later twenty Cherokee boys were selected for admission to Hampton Institute as an experiment in higher education; Will, aged twenty-five, was chosen as one of the number. He spent ten years in New England, going to school for five years and working in Conway, Amherst, North Amherst, and Boston for the rest of the time. He worked hard at his studies, and felt that he was making progress away from his Indian background, but he was frequently troubled by doubts and homesickness. Finally, in poor health, he returned home just prior to his mother's death in the fall of 1904 and seldom ventured away from Qualla again.

Will settled down thankfully to his old way of life. The healthful mountain environment and medicines prescribed by older Cherokee seemed to restore his health, and with it gradually returned his faith in the Cherokee way of life. He found that his white education and experiences had had relatively little effect on his philosophy, and he undertook a project that continued uninterrupted down to the time of his death He began to make a systematic study of Cherokee tradition, buying conjurors' books and individual formulas, and renewed his earlier schooling in supernaturalistic lore with older men. Mooney soon found that Will was becoming one of his best sources of information, and their friendship and mutual efforts to preserve data on Cherokee medicine and ritual continued until the time of Mooney's death. Mooney last worked with Will in 1920, or shortly before.

Some time after his return to Qualla, when he was about 38, Will married. The years that followed were filled with his Cherokee studies, with his attempts to contribute to the betterment of his people by intelligent political activity (he served as a member of the Cherokee council for thirty years), and with the very real business of making a living from his hillside farm.

Mark R. Harrington, Frank G. Speck, William H. Gilbert, Paul Kirchhoff, Arthur Kelly, Franz Olbrechts, Leonard Bloom, and other ethnologists found their way to Will, and his long-standing friendship with Speck was especially productive. Under Will's leadership the Big Cove community re-enacted the whole Cherokee ceremonial cycle for study and recordings. Most of these rituals had been last performed in the 1880's, and the combined tradition and memory of the whole community were called upon for guidance in this resurrection. Later Speck and Will set out to translate and annotate a series of conjurors' books after a more thorough and exact fashion than had been possible with the Swimmer and Black Fox manuscripts, for much of the specific information that went with Mooney's formula books had died with the original owners. This major undertaking was not finished at the time of Will's death.

The years of Will's maturity were troubled times in which he evolved a way of life which differed little from that of his conservative neighbors except for his continuous efforts to extend his knowledge of Cherokee culture. Each decade saw less bottom land in the hands of those who were culturally Cherokee, and agriculture became less important to the Big Cove people. Sheep, cattle, and horses decreased, and in the early part of this century the Big Cove community was becoming less and less self-sufficient. Disease had sapped the strength of the Cherokee for over two centuries. Will was twice widowed and had too often held ineffectual combat with lingering death. Like generations of earlier native doctors, he came to sense the inadequacy of any techniques available for dealing with this and other problems. His faith in traditional medicine and ritual was strong, but he found himself unable to accomplish the results of his teachers, and felt that some essential element of faith or personal power was lacking. Indian economic ways were improvident in competition with Mountain White culture, and the Cherokee had entered into a dependence on the outside world and a monetary economy which they can still neither sustain nor abandon. Cherokee attempts to rationalize such situations often led to little satisfaction, and Will shared with many of his neighbors elements of an Armageddon and world-decay belief which was not especially influenced by Christian models. Franz Olbrechts' inability to understand the problems and conflicts brought about by a disruptive acculturation process led to his ill-advised libels on Will in the *Swimmer Manuscript*.

When I first met Will, in his seventy-fourth year, I was struck mainly by his fresh and eager interest in all sorts of natural phenomena and by his friendly ways toward almost all whom he met. His knowledge of the natural history of his environment was encyclopedic, and he took much pleasure in the observation of some unusual bird or plant. He was an energetic member of his community, and a central figure in communal working of fields and house-building. In many ways Mollie Sequoyah's characterization of Will was most apt. "Will is just a child," she said kindly, "he always was. One minute you see him paying no attention to anyone, and you think he must be awful mad and the next minute he's all smiles and kindness to everybody." Despite his huge ability and his arduous schooling in two cultures, Will had kept the fresh viewpoint and sensitivity of a child. His innocence, even his poor guiles, were childlike, and beneath his dignity, reserve, and fear of injured feeling was a warm, good-humored, playful friendliness. His attitude toward the tradition and ritual he revealed to ethnologists was clear, but caused him considerable difficulty. He believed the knowledge he carried was of very real power, and its potentiality for good or evil strong. On the one hand, he wanted to see it preserved and interpreted, and he needed the wages he received for his work; on the other, he was always afraid of exposing himself and his people to ridicule, and he was never sure that the people who hired him did not use his information for commercial, and perhaps even antisocial, purposes. He saw the men for whom he worked prosper, while he remained impoverished, and he sometimes had fantastic ideas of the wealth of his scholarly friends. Nevertheless, his relationships with ethnologists were apparently little influenced by such considerations.

At the time of his death Will was engaged in translating and interpreting a series of conjurors' books with Frank G. Speck, and writing a Cherokee dictionary with George Myers Stephens; he was working with me on a large scale study of Cherokee ethnobotany, based both on Mooney's unpublished notes and on present Cherokee practice. Not only does Will's loss affect the course of these studies, but much data on other specific fields of inquiry died with him. Especially, however, his friends will miss the fine personality and willing colleague who had so much to contribute to southeastern ethnology.

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JICARILLA APACHE FERTILITY AIDS, AND PRACTICES FOR PREVENTING CONCEPTION

The ideal of Jicarilla family life is to have a gratifying number of children playing in or near the camp, raising the dust that has become the verbal symbol of their existence. "A parent calls all his children 'my dust,' for if he hadn't raised them, they would not be playing and scattering the dust." Therefore sterility or frigidity that interferes with normal relations are normally considered great misfortunes and serve as grounds for divorce. "Sterility is cause for divorce. A man can be sterile too. Some men have a ceremony performed over them so that they can't have children; that is why. Frigidity leads to trouble and divorce too."

A married couple who seem unable to have children may resort to ceremonial help, though this same ceremony is as effective, when utilized differently, for limiting the size of a family:

In the beginning [i.e., the mythological period] eagle feathers and turkey feathers were put before a newly married couple. The man chose the two eagle feathers. That couple had only two children throughout their whole lives, for the eagle has only two children at a time. If he had taken the turkey feathers they would have had many children, for the turkey has many eggs at a time—sometimes twelve, sixteen, or twenty. Now a man who knows this [ritual] can put feathers before a married couple and let them choose. It is a regular ceremony and controls the number of children the couple will have.

The same type of reasoning appears in another practice: "The eggs of the turkey stand for children. If you find a turkey's nest and take all of them out, you are going to have lots of children."

There is another aid to fecundity, useful for animals and man alike: "When corn grows double those who want lots of horses and sheep feed the ears to them. People eat these ears themselves if they want lots of children. Those who do not want many children won't eat them, though."

The spider too has become a symbol of fertility; the threads of its web signify long life and the umbilical cord:

We will never kill a spider. It is bad luck to do so. If you do, someone close to you will die. The spider is used in a ceremony when a person has no children and wants some. The ceremony is conducted over men or women. In it songs are sung about the "spider's rope." This is thought of as the cord that binds the mother and the child together.

While most married couples desire children, it is conceded that some use mechanical means to prevent conception. Because of an accumulation theory of conception according to which the blood (semen) of the male gathers in the woman until the baby begins to develop, this is considered an attempt to prevent the speedy and safe growth of the fetus and is morally condemned. "Withdrawal is sometimes practiced by a couple who do not want a child. It is against the child which is beginning to form. The child will have bad luck therefore." But most often when interference with conception is discussed it is attributed to the woman and is said to take place without the knowledge or consent of the husband:

Sometimes the women try to spill the semen out after intercourse. If the husband knows this, he will consider it against himself and perhaps divorce the woman.

Some women are said to know herbal mixtures which will effectively destroy the embryo. "If you have intercourse all the time and no child comes, they say that the woman must be taking medicine to kill the baby."

The act which the married man most resents is abortion. One individual who felt that he had been cheated and deceived by this means said bitterly:

We call abortion "she kills in the stomach." Some women do not want to have children. They usually kill them by hitting the stomach with something so that the child is killed and comes out too easily. Some women insert things and cause abortion that way. My first wife never bore her first husband any children. She did this with two children from him. Then she did it twice with children of mine. She didn't tell me but I knew it. They do it when they do not want to wait the two years for intercourse [sexual relations are proscribed from the time the child is known to be on the way until it is weaned] and don't want to take care of the child.

As has already been mentioned, ceremonial means are also used to limit childbearing. In fact, the ceremony which was described above, or some variant of it, if conducted over an unmarried girl, is thought to render her childless or relatively infertile: "I have heard of a ceremony in which a man sings and gives an unmarried girl the choice of one of two feathers. One is an eagle feather. If she chooses that one she will only have two children throughout her life—never more—for eagle has two children at a time only. If she takes the other feather she will have many children. S. has a ceremony with which he can make a girl childless."

Plant and animal products, too, may prevent a young girl to whom they are given from ever bearing children. Where health or economy dictate, these foods are also taken by older women to halt the constant arrival of children:

They give a girl a certain kind of small prickly pear to eat and then she won't have children. It is just given once.

I saw a deer, a male but not developed. It was just like a female, half female and half male. I could kill and eat such a deer. But if a young girl should eat that meat before she was married, she would never have any children. I don't know what causes some deer to be hermaphrodite. In the old days this meat of the hermaphrodite deer was kept and if a woman didn't want more children she was fed this. But when the people who owned the meat died, it was destroyed with their possessions. It was burned up. After you eat meat of this kind you can't have children any more. Now we have none of these deer any more.

And since eggs are associated with fertility, those who do not care to be burdened with an excessive number of children are not eager to eat them: "Formerly many of these Indians would not eat eggs. They say that you will have too many children if you do. This is true for men and women both. One woman, now dead, wouldn't eat eggs but liked cakes and cookies [bought at the trading post—M.E.O.] very well. I asked her 'Why do you eat cakes and cookies then, for they have eggs in them?' After that she wouldn't eat any cakes or cookies."

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RELATION OF LAPSE RATE TO RELATIVE CLOTHING NEEDS OF CHILDREN AND ADULTS

In his recent highly informative paper "Climate and Anthropology,"[1] Thomas Gladwin points out, correctly, the relatively higher basal metabolism of small children, and their consequent lesser clothing needs. Not mentioned by Gladwin and, in fact, not discussed in many standard climatological works, is the great contrast between the physical environments of a child (perhaps one meter tall) and of an adult (perhaps two meters tall), particularly during the hours when the sun is shining.

In practically all temperate and tropical environments, during sunlit hours, the average air temperature to which a child is exposed is several to many degrees warmer than that experienced by an adult at the same time. In addition, the wind speed at

[1] Gladwin, Thomas, "Climate and Anthropology," *American Anthropologist* Vol. 49, 1947, 601–611; p. 606.

very low levels is markedly less than that slightly higher up,[2] so that a small child (or a dog) lives in an environment where actual temperatures are somewhat higher, and sensible temperatures appreciably higher, than those in the environment of an adult. A typical thermal comparison chart, showing temperature at the ground surface and simultaneous temperature at five feet above the ground surface (this is the temperature commonly stated in weather reports), comprises Fig. 1. Conditions here shown are fairly typical for middle latitudes (Dugway is approximately 40° N.). The "bumps" in the surface temperature curve, at midday, are due to strong convective activity, also a standard condition in most localities.[3]

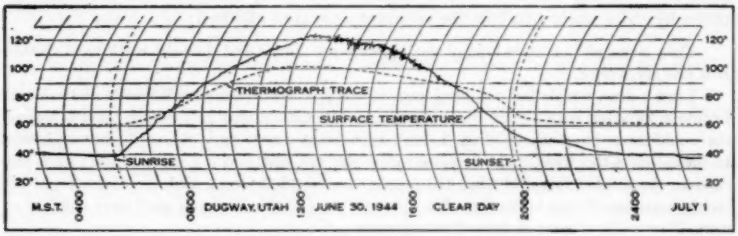

FIG. 1. Temperatures at ground surface and at five feet above the ground, as recorded at Dugway, Utah, on June 30, 1944.

In consequence of these thermal conditions in the lower layers of the atmosphere, normally productive of convection, and causing mirages when extremely developed, the "angelito," clad only in a bead necklace, plays happily and comfortably on the ground, while his parents, exposed to the colder air a meter higher, need one or more layers of clothing before they, too, can be comfortably warm.

It should be specifically noted that this condition does not apply, and may be reversed, within a relatively "tight" dwelling, particularly when artificial heat is used. In this case, the child lives in a colder environment, where his higher basal metabolism is of great, and perhaps of "survival," importance.

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[2] Humphreys, W. J., *Physics of the Air*, New York, 1940, pp. 139–141. Hewson, E. W., and R. W. Longley, *Meteorology, Theoretical and Applied*, New York, 1944, pp. 302–306. Haurwitz, Bernhard, *Dynamic Meteorology*, New York, 1941, pp. 197–201 (*see also* included bibliography).

[3] For details of instrumentation *see* Grinnell, S. W., *Some Instruments Used by Division 10, NDRC at Dugway Proving Ground for the Continuous Recording of Micrometeorological Conditions*, OSRD 6088, Washington, 1946; and Ives, R. L., "Field Temperature Recorders," *Bull. Amer. Met. Soc.* Vol. 27, 1946, pp. 444–449.

THE PROBABILITY OF NUMEROUS INDEPENDENT INVENTIONS

In his stimulating article suggesting the American origin of World civilization, appearing in the *American Anthropologist* for January-March, 1947, Professor Gilbert

N. Lewis adduces a powerful mathematical argument supporting trans-Pacific diffusion. He essays to prove the repeated assumption of re-invention fallacious by estimating the infinitesimal probability that there could be several instances of re-invention in the Old and New Worlds. "It seems safe to say," he writes on page 6, "that not more than one invention in a hundred has been made again, quite independently." On page 12 he writes, "Let us assume that the inhabitants of America were not enormously more inventive than those of Eurasia, and that the probability of re-invention on the two sides of the Pacific is about one in a hundred, although the argument is not greatly affected if this rather arbitrarily chosen probability is several times too great or too small." From this premise he argues the probability of finding two re-inventions in both the Old and New Worlds to be one in ten thousand, the probability of finding three to be one in a million, and so forth. By exhibiting just five undisputed cases of duplication of invention, then, Lewis presents a probability of independence of just one in ten thousand million, which leads to the inescapable conclusion that diffusion between the Old and New Worlds must have accounted for at least some of these duplications.

There is, I agree, a fallacy, but I believe it lies in Professor Lewis' demonstration. I can imagine two misconceptions, either of which might have led to the infinitesimal probability cited. One is the tacit assumption of random sampling. Suppose, to replace Lewis' first premise, that all of the inventions of the New World were placed in a hat, and that only one per cent of these were duplicates of inventions in the Old World. If, then, two inventions were drawn from the hat quite at random, the probability that those two would be duplicates of Old World inventions would be one in ten thousand; if three were drawn, the probability that all three would be duplicates of Old World inventions would be one in a million, and so forth. But the five inventions cited by Lewis were not drawn at random. They were, in fact, selected from all known American inventions precisely because they are duplications of Eurasian inventions. The same figure will serve to illustrate the correct calculation of the probabilities. Suppose that the process of cultural development in America be pictured as the selection of inventions from the same hat, at random with respect to their resemblance to Eurasian inventions (but not necessarily at random with respect to their antecedents). Under these circumstances, and on the average, every hundredth invention to emerge would duplicate an Old World invention.

Another misconception that might have given rise to the faulty calculation is the confusion of two distinct probabilities. If the probability of finding two *areas* such as America and Eurasia with a single case of re-invention between them were one in a hundred such pairs of areas, then it would follow that the probability of finding two cases of re-invention in the same two areas would be but one in ten thousand, and so forth. Lewis' first statement of the probability, quoted above, makes it clear that his estimate concerns the proportion of re-invention among all inventions. This seems to have been converted in his later statement of the probability, also quoted above, which might be interpreted to refer to the probability that two major areas such as America and Eurasia will exhibit a single instance of re-invention between them. But knowledge of the proportion of re-inventions among all inventions does not lead to knowledge of the proportion of all pairs of major areas in which a re-invention would be found. Indeed, such knowledge is probably not discoverable.

If we interpret Lewis' statement to mean that the probability of re-invention on the two sides of the Pacific is about one in a hundred inventions, then the chance of finding any given number of independent inventions of the same item depends not only upon this proportion, but also upon the total number of inventions to be found in the areas. Given the above proportion and given, for example, a thousand inventions in each of the two areas, we should expect about ten cases of duplication, although any number from five to fifteen would not be very improbable. The problem of estimating the number of inventions that have been made in an area such as America or Eurasia now confronts us. Lewis' list, for which he calculated the extremely low probability of re-invention, includes only five basic inventions of material culture, but elsewhere in his article he discusses a design element and a folklore complex as inventions. The well-known culture-element lists of the University of California catalogue nearly three thousand traits for certain California tribes. How many traits might be listed for North, Central and South America we can only guess, but it doubtless is an imposing number. Most of such culture elements, of course, are not basic inventions of material culture; but without becoming involved in an artificial classification of culture traits, it seems reasonable to conclude that there are hundreds, if not thousands, of inventions listable for the whole of America or Eurasia. In short, there are sufficient inventions to permit a considerable number of cases of independent invention, even under Professor Lewis' estimate of the relative frequency of such inventions.

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THE DOCUMENTARY FILM AND THE SCIENTIST PRODUCER

May I reply to some statements made by Dr. Laura Thompson in her review of the film, "Hopi Horizons?"[1]

The most serious implication made is that documentary films in general, and this film in particular, are likely to be one-sided and prejudiced, even when produced by scientists.

Certainly, as the producers, we had some training in objective reporting. We had spent three years in acquiring film techniques and had looked at Canadian, European, and American factual films of every type, so that we were unusually aware, I believe, of the hazards involved in using the medium. We were not employed by or in any way obligated to the Indian Service or to any other group. Indeed, the thought that buoyed us through the time and personal resources expended on the project was the hope that at least we were demonstrating how this tool could be added to the implements of science. Moreover, the script was closely checked for accuracy both by the Hopi Committee and by Mr. Burton Ladd, Superintendent of the Hopi Indian Agency, who appeared in the film only after satisfying himself as to the precision of each statement made, both visually and by the narration.

However, to answer some specific objections:

Is not Dr. Thompson saying that criticism by Second and Third Mesa of the Government program of stock reduction is symptomatic of "social disorganization and

[1] *American Anthropologist*, 49, No. 3, 1947, pp. 464–466.

personality maladjustment"? If so, we must deplore the personality maladjustment of every political dissident to the party in power from Robert Livingston to Robert Taft. It should be added also that First Mesa residents are geographically much closer to the Agency at Keams Canyon than those at Second and Third Mesa, and have closer contacts in the way of Government employment and supervision. The relationship between this and any open expression of social disorganization of this kind might be studied. On the whole, in dealing with controversial questions, we used a kind of film forum device: the Hopi present their point of view as constructively as possible, and the Government position is also presented in pictures, by the narrator, and in the accompanying study guide.

Far from omitting mention of the Hopi Constitution, a film close-up showed this document with the comment: "An important step—this Hopi Constitution in 1936 formulated the powers and responsibilities of the tribe." However, it still seemed proper to report the Hopi position that they should be given more voice in regulating their own affairs in view of the fact that, first, the tribal council is inactive, and secondly, the Constitution reserves for Government decision certain essential powers such as, for example, whether or not the Hopi are permitted to live on, graze stock on, or exercise coal and oil rights for any part of their Reservation.

The reviewer so misstates the film's discussion of Hopi education as to make me wonder if *print* is not a "terrifying medium" for scientists to use. The script expressly points out that much is spent on education, and goes on to suggest, mildly enough, that in view of the high cost, "it is doubly important to have clear goals for their education." The concluding Hopi speaker says, "We want accredited high-school education equal to that offered any other American." Throughout this section the positive achievements of the Indian Service schools are stressed, and the teachers are called "excellent" and "able."

In short, I contend that the documentary film should be accepted by social scientists as a medium like any other means of recording the facts as seen by the conscientious observer. As a medium it is subject to exactly the same limitations as *The Hopi Way* or *Sun Chief* or *Old Oraibi:* the anthropologist had to recognize that his informants are likely to be the most articulate and acculturated members of the group, and to correct for this. True, a film has its own peculiar hazards, in the disinclination some individuals have for being photographed, and the difficulty of visualizing abstract ideas, to offset some of its advantages. But instead of being disturbed at its effectiveness, it would seem far more fruitful for social scientists to welcome this new tool, take it out of the hands of the propagandists, and use it themselves. In the last analysis, the eye of the camera is an ingenuous, anastigmatic eye; the ability of the scholar behind the camera and the acuteness of his vision are far more important.

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TAYACIAN MAN FROM THE CAVE OF FONTÉCHEVADE (CHARENTE)

During August, 1947, the remains of a new and extremely important fossil man were discovered in Central France by Mlle. Germaine Henri-Martin at the Cave of

Fontéchevade (Charente).[1] Previous digging at this site by various archaeologists had revealed the existence there of a series of horizons, the industries of which range from the Mousterian to the Magdalenian. Underlying the Mousterian layer a firm stalagmite floor had until recently discouraged further investigations.

This same thick stalagmite floor was traced to the slope in front of the cave, where Mlle. Henri-Martin has succeeded in penetrating it with significant results. The underlying deposits, which present a maximum thickness of some seven meters, are composed of red, sandy clay and earth; this stratum contains flint implements in direct association with a warm temperate fauna. According to the excavator, the implements have been examined by the Abbé H. Breuil, who considers them to be the same as those found by him in the lowest archaeological horizon at La Micoque, and known as the Tayacian.[2]

The fauna is characterized by the following forms: *Rhinoceros* (*Dicerorhinus*) *merckii*, *Dama* sp., *Hyaena* sp., *Cuon*, *Testudo groeca*,[3] etc. The forms represented, as well as their climatic implications, confirm a Third Interglacial dating for the deposit in question.

Mlle. Henri-Martin, whose systematic and meticulous excavation technique has been commented on by several competent observers, states that the objects from the basal horizon at the Cave of Fontéchevade occur for the most part in pockets, where bones and flints are normally associated. It was in one of these pockets at a depth of 2.60 meters below the surface of the ground and 70 centimeters below the base of the undisturbed stalagmite floor that the fossil human remains came to light.

The main find consists of an incomplete cranial vault, including the following articulated bones: part of the frontal, the two parietals, and part of the left temporal. Among the detached fragments found nearby, there is also a portion of an occipital, apparently of the same individual.

This partially complete brain-case, which was in an extremely fragile condition when first brought to light, had to be hardened before it could be disengaged from its matrix of red earth. Dr. H. Vallois, the results of whose preliminary observations have just been published,[4] states that it is a small-sized vault, and that it can have belonged only to an adult. It is of average length, but the breadth measurement is very low; it has the general ellipsoid form of a pronounced dolichocephal. The bones themselves are thick and robust, but not to a pronounced degree. Dr. Vallois further states that, although the lower portion of the frontal is missing, the segment that remains does not lead one to suspect that the individual represented could have possessed brow-ridges of Neanderthaloid type.

[1] Henri-Martin, (Mlle.) Germaine. "L'Homme fossile Tayacien de la Grotte de Fontéchevade," *Comptes Rendus des Séances de l'Academie des Sciences*, T. 225, pp. 766–767. Paris, October 27, 1947.

[2] Breuil, (Abbé) H. "Le Paléolithique ancien en Europe occidentale et sa Chronologie," *Bull. Soc. Préhist. Française*, Vol. 29, No. 12, pp. 570–578, 1932; Henri-Martin, (Mlle.) Germaine. "Note préliminaire sur un Niveau Tayacien dans la Station préhistorique de Fontéchevade (Charante)," *Ibid.*, Vol. 43, Nos. 5–6, pp. 179–182, 1946.

[3] Henri-Martin, (Mlle.) Germaine. "Une Tortue fossile dans la vallée de Fontéchevade (Charante)," *Ibid.*, Nos. 3–4, pp. 86–87, 1946.

[4] Vallois, H. V. "Un Homme fossile Tayacien en Charante," *L'Anthropologie*, T. 51, Nos. 3–4, pp. 373–374. November, 1947.

The absence of the supra-orbital portion of the frontal bone of Fontéchevade No. I is in large measure compensated for by the fact that the fragmentary remains of a second cranium (Fontéchevade No. II) include the glabella region and a small portion of the upper internal border of the left orbit. These latter remains were found in the same horizon and at a distance of approximately three meters from the sealed pocket that contained individual No. I. According to Dr. Vallois, the glabella region of Fontéchevade No. II is scarcely raised, while the upper border of the orbit presents a sharp, acute angle. Indeed there is nothing whatsoever that even remotely recalls the massive supra-orbital crest, so characteristic a feature of Neanderthal Man. On the other hand, with respect to the morphology of the partially complete frontal bone of individual No. II, they conform absolutely with a fossil *Homo sapiens* type of man, in the opinion of Dr. Vallois.

There can be no question concerning the fact that these finds were *in situ* when discovered by Mlle. Henri-Martin: they come from an undisturbed horizon sealed below a thick, unbroken and continuous layer of stalagmite that underlies the Mousterian level at this locality. Furthermore, the fauna demonstrates that these deposits were accumulated under conditions of the warm temperate climate of Third Interglacial times. And the archaeological material is definitely older than the Mousterian from a typological point of view. The essential point is, however, that this is the first time that Lower Palaeolithic fossil human bones have been discovered in France in a clearly dated stratum. Not only does this evidence further confirm the implications of the physical type represented by the even older (Second Interglacial) Swanscombe Man (and presumably Piltdown and Galley Hill as well), but it may be accepted as further proof that prior to the Würm I Glacial Stage, a race of men with definitely non-Neanderthaloid-type skull vaults was living in Western Europe. But, as Dr. Vallois has commented, to date we do not possess any very satisfactory evidence concerning to what extent these pre-Neanderthal Europeans exhibited primitive characteristics, with the exception of the brain case. Certainly that they were of fundamentally modern type with respect to the latter feature can no longer be denied, even by the most profound skeptics.

HALLAM L. MOVIUS, JR.

PEABODY MUSEUM
HARVARD UNIVERSITY
CAMBRIDGE, MASS.

NOTES AND NEWS

INFORMATION CONCERNING THE FULBRIGHT ACT

The following summary has been prepared in response to a growing interest in the Fulbright Act and in particular to the opportunities it affords in all fields of teaching and advanced research in institutions of higher learning.

The Fulbright Act (Public Law No. 584) authorizes the Department of State to use a portion of the foreign currencies resulting from the sale of surplus property abroad for purposes of educational interchange and activities with foreign countries.

At present, agreements have been signed with only two countries—China and Burma; but negotiations are in progress with the following: Australia, Austria, Belgium, Denmark, Egypt, Finland, France, Greece, Hungary, India, Iran, Italy, the Netherlands, the Netherlands East Indies, New Zealand, Norway, Pakistan, the Philippines, Siam, Turkey, the United Kingdom; and it is expected that other countries may be added to the list.

It should be stressed that since the money available is only in foreign currencies and is not convertible to American dollars, individual arrangements must be made by each American participating in the program for such dollar balances as he will require to meet his family needs and other obligations in the United States during the period of his absence abroad.

While the term "educational interchange" may be interpreted very broadly, the following amplification will serve as a more useful guide to the types of activities envisaged:

Aid in international reconstruction by assisting foreign countries to secure the services of Americans with specialized knowledges and skills and to assist the peoples of these countries to understand the American people, their achievements and their ideals.

Provision for Americans to study, teach, and conduct research abroad in connection with American schools or with institutions of higher learning, and to add to the American store of knowledge of foreign areas, peoples and cultures.

Opportunities for a limited number of foreign students to study in American institutions abroad and to assist foreign students and teachers to engage in educational activities in the United States by paying for their transportation wherever foreign currencies can be used for this purpose.

Under the terms of the Fulbright Act, a Board of Foreign Scholarships, appointed by the President of the United States, is charged with the responsibility of selecting individuals and institutions which will parti)ipate under the act and with the supervision of the exchange program. The Board is composed of individuals representing a wide range of educational and cultural interests in addition to representatives of the government agencies most concerned:

The Board has delegated responsibility for preliminary screening of applicants for grants to three agencies:

1. The Institute of International Education for those wishing to study in foreign institutions, primarily at the graduate level.

2. The Office of Education for those wishing to teach abroad in national elementary and secondary schools.

3. The Conference Board of Associated Research Councils for those wishing to teach, lecture or offer technical instruction in connection with institutions of higher learning or to pursue studies and research abroad at the post-doctoral level.

For discharging this responsibility, the Conference Board has established a Committee on International Exchange of Persons, with offices at the National Academy of Sciences Building, Washington, D. C. All inquiries concerning the exchange of professors, lecturers, specialists and research scholars at the post-doctoral level, and inquiries concerning opportunities for teaching in

American primary and secondary schools abroad including requests for application forms should be addressed to: Dr. Gordon Bowles, Executive Secretary, Committee on International Exchange of Persons, Conference Board of Associated Research Councils, 2101 Constitution Avenue, Washington 25, D. C.

Inquiries relating to graduate student exchanges should be addressed to: Institute of International Education, 2 West 45th Street, New York 19, N. Y.

All inquiries relating to national primary and secondary school teaching should be addressed to: The Office of Education, 4th and Independence Ave. S.W., Washington, D. C.

Inquiries relating to exchanges other than those concerned with the Fulbright Act should be addressed to: The Division of International Exchange of Persons, Department of State, Washington 25, D. C.

INTERNATIONAL ANTHROPOLOGICAL CONGRESS AT BRUSSELS, 1948

The Third Session of the International Congress of Anthropological and Ethnological Sciences will be held at Brussels and Tervuren, Belgium, August 15 to 23, 1948. This session had been scheduled to be held in Prague in 1947. On the 24th an excursion will be made to Ghent and Bruges, and on the 25th one to Louvain, Liége and Namur. From the 26th to the 28th there will be another excursion especially intended for prehistorians and students of folk-life. Special exhibitions will be arranged in the museums of the cities.

Full membership, entitling member to attend, vote, and to receive a copy of the Proceedings, can be obtained by application, enclosing the fee of $9.00. Friends accompanying members, or students introduced by professors, may attend as Associate Members at a smaller fee. Board and lodging at very reasonable rates have been arranged for members at the dormitories and cafeteria of Brussels University.

The official languages of the Congress are English, French, German, Italian and Spanish. Members may submit a maximum of three papers. A typewritten synopsis of each paper, not exceeding 200 words, must be received before June 1, and the complete text, with illustrations, should be in the Secretariat before July 1.

For circular giving fuller details, and application blank, address the Secretary, Frans M. Olbrechts, Musée du Congo Belge, Tervuren, Belgium.

INTERNATIONAL CONGRESS OF AMERICANISTS, NEW YORK, 1949

The 29th International Congress of Americanists will be held in New York City the summer of 1949. The Viking Fund, Inc., has generously made a large grant, primarily to aid the attendance of European scholars.

FOLK MUSIC AND FOLK DANCE FESTIVAL, EDINBURGH, 1948

A Folk Music and Folk Dance Festival is to be held in Edinburgh from June 28 to July 3, 1948. The Scottish Anthropological and Folklore Society is responsible for the arrangements, but will have the enthusiastic cooperation of the Scottish Country Dance Society, the English Folk Dance and Song Society, the Belfast Folk Dance Society, and similar bodies in Wales, the Isle of Man, and Eire. The program of the Festival includes morning sessions for the reading of papers, evening sessions for folk-dance displays by teams from various parts of the British Isles, a folk-music concert, and open-air performances. One evening will be devoted to a Folk Dance Ball. An exhibition of material relating to folk-dancing and folk-music will also be arranged. Those who wish to become members of the Festival should make application to Mr. Alex. Cuthbert, C.A., 46 Castle Street, Edinburgh 2, Scotland.

CONGRESO INDIGENISTA INTERAMERICANO

The second Congreso Indigenista Interamericano will be held in Cuzco, Peru, from June 24 to July 4, 1948. The first Congress was held in Pátzcuaro, Mexico, in April, 1940.

The Congress will comprise five Sections: General and Human Biology, Anthropology, Socio-economics, Education, and Legal. Official delegates and other invited persons will compose the membership of the Congress, but non-members may present papers on subjects within the general scope. Such papers must be sent to the Secretary General of the Congress at Lima, Peru, before June 1, written in either Spanish or English, the two official languages, and accompanied by a type-written summary of not over three double-spaced pages, the latter in both languages if possible.

Fuller information can be obtained from Dr. Manuel Gamio, Director, Instituto Indigenista Interamericano, Calle de Liverpool 2, Mexico, D. F.

SOUTHWESTERN ARCHAEOLOGICAL CONFERENCE

By agreement of those attending the Sixth Annual Chaco Canyon Anthropological Conference during the summer of 1947, the 1948 session will be held at the University of Arizona Archaeological Field School at Point of Pines on the San Carlos Indian Reservation, Arizona.

It was suggested that the conference be held after the Gallup Ceremonial which has been announced for August 19–22, 1948. The Southwestern Archaeological Conference dates, therefore, will be August 24, 25, 26, 1948. A cordial invitation is extended to anthropologists to attend the meeting. While the discussions will center about Southwestern archaeological problems, efforts will be made to keep the scope broad enough to hold the interest of those not primarily engaged in this field.

Through the courtesy of the Viking Fund, Inc., New York, the University will furnish board and such lodging in tents (capacity about 65) as will be available. Participants are requested to bring small tents if possible and their own bed-rolls.

Inquiries and suggestions for the agenda will be welcomed. Applications must be received by August 15.

Emil W. Haury
San Carlos, Arizona

UNIVERSITY OF NEW MEXICO FIELD SESSIONS

The Eighteenth Annual Field Sessions in Anthropology of the University of New Mexico will be held from June 14 through July 24, 1948. The sessions are open to lower and upper division undergraduates and to graduates. Three courses are offered. The enrollment for course 175Fs, Advanced Field Session, is already full. The General Field Session course, 75Fs, is intended for students of lower division, undergraduate level, who have had no previous field experience. Six semester hours of credit are given. The course combines actual excavation with laboratory work and lectures. Also a research course for qualified advanced or graduate students, 199Fs, is offered, giving two to six semester hours credit. For full details address Anthropology Field Sessions, Box 107, University of New Mexico, Albuquerque, New Mexico.

COLORADO FIELD COURSE IN SOCIAL SCIENCE

The University of Colorado will offer a five-week Field Course in Social Science during the second term of the summer quarter, July 26 to August 27, 1948. This is Course No. 280 in Anthropology, Economics, Education, Geography, Political Science, Psychology or Sociology. Enrollment is limited to eight graduate students, and four to six quarter hours credit will be awarded. The group will analyze the community of Ignacio, Colorado, which is composed in about equal proportions of Ute Indians, Spanish-Americans, and persons of European ancestry.

Applications for admission must be received by June 20. These, and requests for additional information, should be addressed to the instructor, Dr. Omer C. Stewart, Department of Social Sciences, University of Colorado, Boulder, Colorado.

UNIVERSITY OF PENNSYLVANIA FIELD SESSION

The Department of Anthropology of the University of Pennsylvania will conduct an archeological Field Session in Maine from July 6 to August 21, 1948. This is open to students on both graduate and undergraduate levels who will participate in the excavation of a stratified site now being uncovered. In addition to instruction in field and laboratory techniques, lectures will be given on the archeology and ethnology of the Northeast. Students must have had at least an elementary course in anthropology. The Session will be given the course number "Anthropology 501," and credit will be given upon completion. For further details address Dr. Theodore Stern, Department of Anthropology, Box 14, Bennett Hall, University of Pennsylvania, Philadelphia 4, Pa.

UNIVERSITY OF MICHIGAN FIELD SESSION

The University of Michigan offers a ten-weeks archaeological field session this summer, limited to eight students who are anthropology majors. The period is from June 26 to September 5. Three precolumbian archeological sites near Killarney on the north shore of Georgian Bay, Ontario, will be excavated. Credit of six hours will be given for the course, known as Anthropology 255. Except for tuition for out-of-state students expenses are paid by the University. Applications and requests for further information should be addressed to the Director of the party, Dr. E. F. Greenman, Museum of Anthropology, Ann Arbor, Michigan.

UNIVERSITY OF WASHINGTON FIELD SESSION AND FELLOWSHIPS

The Department of Anthropology of the University of Washington announces its Third Annual Summer Field Session, June 21 to August 20, 1948. Three courses are offered: Anthropology 190, Undergraduate Research; 199, Field Course in Archaeology; 300, Graduate Research. In the research courses, either archeological or ethnological projects are acceptable, and a minimum of twenty credits in anthropology is a prerequisite. Academic credit is given.

The University also offers fellowships and scholarships in anthropology on a competitive basis. Teaching and Research Fellowships, and other fellowships and scholarships are awarded. Requests for further information on both the above topics should be sent to Department of Anthropology, University of Washington, Seattle 5, Washington.

FIELD SESSIONS IN COLORADO, OKLAHOMA, AND OHIO[1]

The Department of Social Sciences of the University of Colorado, in conjunction with the University Museum, will offer a five-weeks course, June 18 to July 25, in archeological research in the Yampa Canyon region in Northwestern Colorado, under the joint direction of Robert Burgh and Robert H. Lister.

From June 22 to July 28 the Ohio State University and the Ohio State Museum will excavate a large mound in the Cowan Creek Lake area near Wilmington, Ohio, under the direction of Richard G. Morgan and Raymond S. Baby.

The Department of Anthropology, in conjunction with the University of Oklahoma Museum, offers an eight-weeks field course from June 1 to July 30. Four weeks will be spent at the Scott site, a midden deposit, and four at the Norman site, a mound. Students unable to complete the entire course may attend for four weeks, on application to Dr. Robert E. Bell, Director of the Field Session, Department of Anthropology, University of Oklahoma, Norman, Oklahoma.

LECTURE BY DR. LE GROS CLARK

Professor W. E. Le Gros Clark, outstanding British anthropologist and Chairman of the

[1] Full details of these three field sessions are omitted, as the closing dates for receipt of applications have already passed.

Department of Human Anatomy at Oxford University, will come to New York in the early summer at the invitation of the Viking Fund Seminar in Physical Anthropology. He will give a public lecture on his recent investigations in South Africa at the Hunter College Playhouse at 8 o'clock on the evening of July 1. (Entrance on 68 St. between Park and Lexington Aves.)

Dr. Clark will bring news and pictures of the specimens of prehistoric Australopithecus found in South Africa, and also of the anthropoid fossils found last summer by L. S. B. Leakey in Miocene deposits in East Africa.

SSRC TRAINING FELLOWSHIPS AND TRAVEL GRANTS

In 1948 the Social Science Research Council will offer fellowships and travel grants for research on problems clearly related to the understanding of the contemporary culture of a major world area outside the United States and Canada. Preference will be given to candidates in fields of the social sciences (anthropology, economics, history, human geography, political science, social psychology, sociology), but applications will be considered for training in research in closely related fields of the humanities and of the natural sciences. Eligibility for both the fellowships and the travel grants will be limited to citizens and permanent residents of the United States and Canada. Three types of award will be made: Predoctoral Area Research Training Fellowships, Postdoctoral Area Research Training Fellowships, and Travel Grants. For awards to be announced in June, 1948, applications must be received by April 1, but they will also be received after that date for awards to be made in November, 1948. For further details address the Office of the Fellowship Secretary, Social Science Research Council, 230 Park Avenue, New York 17, N. Y.

FIFTH PLAINS ARCHEOLOGICAL CONFERENCE

The Fifth Plains Archeological Conference met at the University of Nebraska, Lincoln, Nebraska, November 28 and 29, 1947. Eighty-four persons attended. In the symposium on Recent Field Work in the Plains Area seventeen speakers reported on their research. The second session was devoted to a discussion of pottery from the Plains and adjacent areas; fourteen men participated in this. The second day was given to general papers on the various phases of Plains archeology, and a symposium on the Paleo-Indian in the Central Plains.

The News Letter of the Plains Archeological Conference will be continued as a clearing house for professional information, and the issue of December 10, 1947 (Vol. I, No. 2) contains a digest of the papers given at the Conference, as well as other data. Issues will be sent to subscribers by Jesse D. Jennings, Editor, c/o National Park Service, Omaha, Nebraska, on receipt of $1.00.

JAPANESE SOCIOLOGICAL CONVENTION

The 20th Japanese Sociological Convention was held in Tokyo, October 25 and 26, 1947. More than one hundred and fifty members of the Japanese Sociological Society and interested visitors attended the sessions. Guest lectures were given by John Pelzel on "Applied Anthropology in the United States," by Herbert Passin on "Social-Psychological Dimensions of Public Opinion," and by Wu Wen-Tsao of the Chinese Mission on "The Development of Sociology in Wartime China." Eight general papers were presented, and four Special Research Reports on the New Social Studies Curriculum.

FORSYTH DENTAL INFIRMARY FOR CHILDREN

The Forsyth Dental Infirmary for Children of Boston has received from the Charles H. Hood Dairy Foundation a five-year grant of $25,000 in support of a long-term study of growth and development of the teeth and jaws in relation to the problem of "malocclusion" of the human dentition. The following members of the Forsyth staff are participating in the study: Dr. C. F. A. Moorrees, orthodontist; Mr. Stanley M. Garn, physical anthropologist; and Dr. V. O. Hurme, director of clinical research.

An Advisory Committee for the study consists of: Dr. George B. Wislocki, James Stillman Professor of Comparative Anatomy, Harvard Medical School; Dr. Harold C. Stuart, Professor of Maternal and Child Health, Harvard School of Public Health; Dr. Earnest Hooton, Professor of Anthropology, Harvard University; Dr. Roy O. Greep, Associate Professor of Dental Science, Harvard School of Dental Medicine.

The study will attempt to evaluate the many variables which influence the structure and function of the teeth and jaws and will stress body build, growth rate, inheritance, socio-economic status, nutritional and psychological factors.

NAVAHO SAND-PAINTINGS

On January 21, 1948, Miss Katherine Harvey of Santa Barbara, California, presented to the Colorado Springs Fine Arts Center the John Frederick Huckel Collection of 111 Navaho sandpaintings in memory of her uncle and aunt, the late Mr. and Mrs. John Frederick Huckel of Kansas City. The paintings, now available for study, were made in watercolor between 1902 and 1924. Many belong to the Shooting, Mountain and Wind chants; others belong to some of the Navaho chants, now rarely sung.

TWO NEW JOURNALS

We welcome two new anthropological journals and wish them great success and long life.

Archaeology is a new periodical of the Archaeological Institute of America, successor to *Art and Archaeology* (which ceased publication in 1934), and of similar nature, well illustrated and less professional and technical than the Institute's other journal, the *American Journal of Archaeology*. Dealing with the antiquity of the world, it will be published quarterly, and Vol. I, No. 1 is of March, 1948, a magazine of 68 pages. The quality of subjects and authors may be judged by the content of this issue: "Celt from Asine"; Editorials; "Sutton Hoo," by T. C. Lethbridge; "Pot's Progress," by Lucy Talcott and Alison Frantz; "The Art of New Rome at Baltimore," by Glanville Downey; "Bonampak"; Ovid, New York; "Ostia on the Tiber," by Henry T. Rowell; "The State of Antiquities in Samothrace," by Karl Lehmann; "Recent Discoveries in Britain," by Jacquetta Hawkes; "Who Uses the Archaeological Material in American Museums?" by Theodore L. Low; News; Book Reviews; and New Books.

The editor is Jotham Johnson, Washington Square College, New York University, New York 3, N. Y. The subscription is $6.00 per volume, obtained by addressing Circulation Manager, *Archaeology*, Washington Square College, New York University, New York 3, N. Y., but the journal may also be obtained as one of the privileges of membership in the Archaeological Institute of America (Annual Members $10.00, Sustaining Members $15.00). Sustaining Members receive both *Archaeology* and the *American Journal of Archaeology*. For membership address Stephen B. Luce, General Secretary, Archaeological Institute of America, Andover Hall, Cambridge 38. Massachusetts.

"The first scientific journal published after India had attained her goal of independence" is *The Eastern Anthropologist*, of which Vol. I, No. 1 appeared in September, 1947. This is to be "a quarterly record of ethnography and folk culture, edited by D. N. Majumdar, published by the Ethnographic and Folk Culture Society, U.P., and distributed by the Universal Publishers Ltd., The Mall, Lucknow, India. Each number will include original articles, reports of proceedings of the Ethnographic and Folk Culture Society U.P., correspondence, research news, and reviews of recent books. Contents of the first number include "The People of Nepal" by B. D. Sanwal; "Report on the Serological Survey of the United Provinces, 1941 Census," by D. N. Majumdar and Kunwar Kishen; "Some Folk Elements in Gujerat Culture," by T. B. Naik; "Myths, Religion and Ritual of the Kamars," by S. C. Dube; Review of J. H. Hutton's *Caste in India*, by Nasir Ahmad; and Review of B. Malinowski's *A Scientific Theory of Culture and Other Essays*, by N. S. Reddy. No. 2 of the first volume, for December, 1947, is a "Criminal Tribes Number" and con-

tains articles by P. C. Reddy, A. M. Somasundaram, B. S. Bhargava, D. N. Majumdar, and Som Dev.

The annual subscription is Rs 10. Dr. D. N. Majumdar, the editor, will be glad to consider contributions sent to him at the Anthropological Laboratory, Lucknow University, Lucknow, India.

VIKING AWARD TO DR. LOWIE

Dr. Robert H. Lowie, Chairman of the Department of Anthropology at the University of California in Berkeley, was awarded the Viking Fund Medal and Prize for 1947 in the field of cultural anthropology. This is one of three such awards made annually by the Viking Fund, Inc., of New York for outstanding work done during the year, and the recipient is chosen by a committee of the American Anthropological Association. The presentation was made at the Annual Dinner of the Association in Albuquerque in December by Dr. Walter Dyk on behalf of Dr. Paul Fejos, Director of Research of the Viking Fund.

CONTENTS OF FORTHCOMING ISSUES OF THE *AMERICAN ANTHROPOLOGIST*

The July, 1948, number will contain the following:

Articles: "White's View of Culture," by A. L. Kroeber; "The Definition and Prohibition of Incest," by Leslie A. White; "On the Place of 'Themes' and Kindred Concepts in Social Theory," by Albert K. Cohen; "Social Organization in Native California and the Origin of Clans," by Walter Goldschmidt; "Synthesis and Other Processes in Sikhism," by Marian W. Smith, "Notes on a Bachelor House in the South China Area," by Robert F. Spencer and S. A. Barrett; and "The Present Status of Anthropology in Northeastern North America: A Review Article," by William N. Fenton.

Brief Communications: "Presuppositions in Anthropological Interpretations," by Wilson D. Wallis; "Further Comments on Evolutionism in Cultural Anthropology," by Melville Jacobs; "Random Thoughts on 'Men out of Asia'," by S. K. Lothrop; "Names of American Negro Slaves," by M. D. W. Jeffreys; "Some Points of Interest from Han Hung Su's 'Studies on Megalithic Culture of Korea'," by James Hoyt; "Japanese Glass Fishing Floats," by William S. Laughlin; and "The Anthropological Survey of India," by Verrier Elwin.

The Walter W. Taylor Memoir, "A Study of Archeology," will appear with the July issue.

NEW AAA FELLOWS

The Executive Board elected the following as Fellows of the American Anthropological Association, at the Board Meeting in Albuquerque, N. M., December 27, 1947:

Aberle, Sophie Bledsoe	Grigolia, Alexander	Schulman, Edmund
Baldwin, Gordon C.	Harley, George W.	Watkins, Francis E.
Blom, Frans		

CHANGE OF ADDRESS

Notice of change of address should be sent to: Dr. Erminie W. Voegelin, Executive Secretary of the American Anthropological Association, Department of Anthropology, Indiana University, Bloomington, Indiana.

Changes of address must be sent before the following dates: January 1, April 1, July 1, and October 1.

Lost copies of the *Anthropologist* and *Memoirs* cannot be replaced if the Executive Secretary has not been notified at the proper times.

REPORT

PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR THE YEAR ENDING DECEMBER 1947

The American Anthropological Association held its forty-sixth annual meeting at the University of New Mexico, Albuquerque, December 28–31, 1947, in conjunction with special meetings of the Society for American Archaeology and the Society for Applied Anthropology. The registered attendance was 307 persons.

REPORT OF THE SECRETARY

January–May 1947

As directed at the December 29, 1946 meeting of the American Anthropological Association, copies of the resolution on Argentinian scientists were forwarded by the Secretary to various Latin American societies and individuals, to the government of Brazil and to the Director of *UNESCO*, as well as to our own State Department. Acknowledgments from the State Department, *UNESCO*, and some of the individuals and societies in Latin America were received, but to date no word has been received from Brazil.

Copies of the resolution regarding the safeguarding of Australian aborigines were sent to government officials in Australia and one acknowledgement, that of Mr. John J. Dedman, Minister for Post-War Reconstruction, was received. It reads in part as follows:

> I enclose, for your information, a copy of a statement made by me to Parliament on the 22nd November, 1946, relative to this project. As mentioned in this statement, it is the policy of the Government to do everything possible to safeguard the interests of those aborigines who might be affected in any way by the construction of the range. In this regard, the Australian Committee on Guided Projectiles, which is a technical body established to conduct investigations in connection with the project, has been instructed to consult with the Director of Native Affairs and other authorities concerned in the well-being of aborigines, and to report on the measures necessary to ensure their safety and welfare.
>
> Your representations will be brought to the notice of the Committee for its consideration.

In February, back files of the American Anthropologist were sent to the Science Library in Manila.

Upon invitation from the State Department, the President appointed Frederica de Laguna to represent the AAA at a special conference on *UNESCO* which was held in Philadelphia, March 24–26, and Omer Stewart to represent the AAA at a similar conference held in Denver, May 15–17.

As our delegates to the Annual Meeting of the American Academy of Political and Social Science, at Philadelphia, April 18–19, President Benedict appointed Frederica de Laguna and M. F. Ashley Montagu.

Frank H. H. Roberts, Jr., was appointed official AAA representative to a conference held April 15, in Washington, which considered the formation of a National Council for the Preservation of Historic Sites, Buildings, and Monuments.

President Benedict appointed Morris E. Opler as Chairman of the Committee on Government Records to work in conjunction with a similar committee of the SSRC.

Dr. George Herzog was asked by the President to form the Committee on Anthropologists' Activities in Enemy Countries.

The Executive Committee of the AAA voted to ratify the By-Laws of the American Council of Learned Societies as passed at the annual meeting of the ACLS in January.

The Executive Committee voted to cover the expenses of our two delegates, Robert Redfield and Alexander Leighton, to the AAAS Inter-Society Committee on Science Foundation Legislation which met in Washington on February 23. It voted further to cover the expenses of our delegates to the meeting on *UNESCO* in Philadelphia.

The following Elections Committee (W. Fenton, G. Willey, and R. Flannery, *chairman*) was

appointed by the President and on May 21, carried out its function of counting the votes received by mail ballot for election of new officers of the Association.

Respectfully submitted,
REGINA FLANNERY, *Secretary*

REPORT OF THE TREASURER

December 1, 1946–June 30, 1947

The current balances of the three funds of the Association appear on the books as follows:

Operating Fund	$ 8,480.47
Permanent Fund	8,597.44
Memoir Fund	2,718.11
Total	$19,796.02

Of the above, $8,584.37 is deposited in Philadelphia savings banks; $4,995.00 is invested in interest-bearing government savings bonds and $6,216.65 is deposited in a checking account with the National Bank of Germantown, Philadelphia. $797.64 of the checking account is allocated to the Memoir Fund to be used to meet costs of printing the memoir series. $2,000.00 of the checking account has also been advanced to the new Treasurer, as of June 25th, to meet current expenses until the checking account can be transferred. A $500.00 subvention was received from the Viking Fund to be applied toward the expense of printing the La Barre Memoir.

Cash on hand in checking account of Operating Fund as of 6/30/47	$6,216.65
Cash on hand in checking account allocated to Memoir Fund	797.64
Balance in checking account of Operating Fund as of June 30, 1947	$5,419.01

DETAILS OF PERMANENT FUND

June 30, 1947

Balance on hand November 30, 1946		$8,557.37
6—$ 25.00 Government Bonds		
6—$ 100.00 Government Bonds		
6—$1,000.00 Government Bonds		
at a cost of	$4,995.00	
(Maturity Value: $6,750.00)		
On deposit with Western Savings Account #J64091	1,074.32	
On deposit with Beneficial Savings Account #191478	2,528.12	$8,597.44

DETAILS OF MEMOIR FUND

June 30, 1947

Balance on hand November 30, 1946		$4,008.06
On deposit in checking account with National Bank of Germantown	$ 797.64	
On deposit with Western Savings Account #J64091	920.47	
On deposit with Savings Fund Society of Germantown	1,000.00	$2,718.11

Nov. 30, 1946 checking account balance, $2,097.83 plus $500 subvention from Viking Fund, less $1,800.19, 1947 costs for Memoir publications—balance $797.64.

Details of Operating Fund

June 30, 1947

Gross Receipts:

Balance on hand November 30, 1946		$6,480.79	
AAA:			
1943	$ 6.00		
1944	24.00		
1945	30.00		
1946	190.40		
1947	3,971.60		
1948	61.80		
1949	11.40	4,295.20	
AES:			
1946	$ 10.00		
1947	1,041.00	1,051.00	
ASW:			
1947	$ 270.00	270.00	
CSB:			
1946	$ 20.00		
1947	467.00	487.00	
Fellows Dues.			
1947	$ 699.00	699.00	
Reimbursements for reprints sales		228.36	
Sales		1,426.72	
1946 interest on operating fund (received)		34.06	
			$14,972.13

Gross Disbursements

Memberships:			
American Council on Education		$ 10.00	
Inter-Science Committee		25.00	
Committee for Recovery of Archaeological Remains—J. O. Brew		125.71	
Committee of Nine on Reorganization—Julian Steward, *chairman*		186.23	
Executive Board Expense		143.41	
Interim Committee Expense		112.60	
Dr. Redfield's expenses to Inter-Soc. Comm. on Science Foundation		78.90	
Treasurer National Research Council to aid in compiling directory		500.00	
UNESCO representative's expenses		33.19	
Fellows' News Bulletin, etc. expenses		55.30	
George Banta Publishing Company:			
Printing and Illustrating	$2,643.30		
Reprints	283.40		
Storage	47.75	2,974.45	

Editor's Account:		
Traveling Expenses	90.05	
Assistant	1,100.02	
Office Expense	142.45	1,332.52
Secretary's Account:		
Annual Meeting (rooms, programs, etc.)	276.70	
Assistant	52.50	
Traveling Expenses	95.33	434.53
Treasurer's Account:		
Traveling Expenses	16.60	
Assistant	340.00	
Office Expense	78.24	
Reimbursement	34.15	468.99
President's (R. F. Benedict) Expense		10.83
Balance on hand June 30, 1947		8,480.47
		$14,972.13

JOHN A. NOON, *Treasurer*

REPORT OF THE AUDITING COMMITTEE

We, the undersigned, appointed as an Auditing Committee, report that we have examined the Treasurer's accounts for the period December 1, 1946 to June 30, 1947 and have found them to be correct to the best of our knowledge.

GEORGE M. FOSTER, *chairman*, GORDON R. WILLEY, MARSHALL T. NEWMAN

REPORT OF THE INTERIM NOMINATING COMMITTEE

May 22, 1947

The Committee, as required by the transitional section of the new Constitution, reports that the slate elected by mail ballot was as follows:

President: C. Kluckhohn
Vice-President: F. R. Eggan
Board Members:
To end of 1947: M. J. Herskovits and C. F. Voegelin
To end of 1948: C. Du Bois and W. W. Howells
To end of 1949: R. L. Beals and W. W. Hill

J. M. COOPER, *chairman*, W. C. BENNETT, A. I. HALLOWELL, A. L. KROEBER, W. M. KROGMAN

BUSINESS MEETING OF THE COUNCIL

President Kluckhohn presided at the annual business meeting of the Council (Fellows), held on December 28, 1947, at 8:00 P.M.

The minutes of the forty-fifth annual meeting, held in Chicago in 1946, were not read, and there being no objections or corrections thereto, they were approved as printed in the American Anthropologist, Vol. 49, No. 2, pp. 346–365, April–June, 1947.

REPORT OF THE EXECUTIVE BOARD*

June–December, 1947

(Taken from the News Bulletin, Vol. 1, No. 1 and No. 2, and as reported to the Council.)

Meetings of the Executive Board were held on June 7th and 8th, in New York and on December 27 in Albuquerque. The last was attended by all the officers of the Association and by representatives of affiliated and kindred organizations. In addition, regional meetings of the Board, attended by the President and two to three Board Members, were held in Albuquerque on September 4th and in Chicago on September 6th and 22nd.

In this transitional period the Executive Board was necessarily preoccupied with establishing new procedures and routines. As organizational "housekeeping" becomes more automatic, the Board will be able to give its primary attention to questions of broad professional interest.

The first major step undertaken was the securing of a grant from the Carnegie Corporation for a Secretariat and the appointment of Erminie W. Voegelin as Executive Secretary to the Board. Dr. Voegelin, with the cooperation of members of the Board and the Secretary and Treasurer of the Association, initiated an intensive membership campaign. It was discovered that many professional anthropologists and students of anthropology were not members but welcomed an invitation to join. The campaign has now been extended to libraries and to representatives of related fields. Dr. Voegelin and the Board also surveyed with considerable care possible candidates for fellowship, and more than one hundred new Fellows have been elected.

The experience of past months suggested certain amendments to the Constitution, relative to the creation of the categories of Liaison Fellow and Foreign Fellow. These amendments were proposed to the Fellows by mail ballot in order to protect the already crowded agenda for the Council meeting and in order to permit Fellows who cannot attend the annual meeting to participate in these decisions. (*See* "Report of Elections Committee" below.)

The Board and Dr. Voegelin have also devoted a great deal of time to the directives given by the Council at the last Annual Meeting. The following are nearing completion and certain of this information will be published in early issues of the News Bulletin.:

1) Compilation of a list of all professional anthropologists in the United States, regardless of their membership in the Association.

2) Compilation of a list of universities, museums and other institutions giving instruction in anthropology, listing under each the anthropological staff and the degrees the institution is prepared to give.

3) Compilation of an annual list of persons receiving an A.B., M.A., or Ph.D. in anthropology and a list of their dissertations.

4) A map giving the geographical distribution of anthropologists with a view to selection of annual meeting places.

Substantial progress has also been made with respect to certain of the broader directives. The whole policy of the Board has been directed toward the promotion of the re-integration of the various special fields of anthropology. One concrete step in this direction has been the cooperative creation of an Editorial Council of the Association, consisting of the Editors of all anthropological journals having national or international scope. The program for the annual meeting was planned with a view to emphasizing general anthropology. The Society for American Archaeology was invited to hold its annual meeting jointly with ours, but this proved impossible without amending their By-laws. However, they were able to hold a special meeting at Albuquerque with the AAA. Folklore societies in the Western states collaborated in a folklore symposium and a special session on linguistics was planned. Questions of policies affecting the American Anthropologist have been carefully considered with a view to emphasizing general anthropology.

* It should be noted that the many activities of the Executive Secretary are not reported separately but are included *in passim* in the Report of the Executive Board. Likewise, a large part of the new procedures, policies and activities adopted by the Board in recent months will devolve upon this officer.

Considerable attention has been devoted to the finances of the Association. Ralph Beals and W. W. Howells have been appointed as a sub-committee on the Board to share with the Treasurer special responsibility for our financial procedures and policies. The Board realizes that the expenses of the Association during the current year have been heavier than in the past. However, a noteworthy increase in income from new memberships is assured, although only a minor portion of this will be reflected in the statement for the present fiscal year. The Board has voted that the books of the Association should be audited by a CPA.

The Board collaborated in preparing the *Declaration on Human Rights*, which appeared in the October 1947 American Anthropologist, Vol. 49, No. 4. The original draft was written by Melville J. Herskovits. Contacts concerning this statement have been made, either in person or by mail, with various State Department and United Nations commissions.

Other matters acted upon by the Board were as follows:

D. B. Stout and Ethel G. Aginsky were appointed as Secretary and Treasurer, respectively.

After extended deliberations, Albuquerque was selected as the site of the annual meeting. It was felt that a large number of the Members and Fellows of the Association in the southwestern and western states would welcome the opportunity to attend a meeting at reasonable cost.

A Program Committee was appointed consisting of Loren C. Eiseley, *chairman*, William Bascom, Gordon Bowles, Gordon Ekholm, Douglas Oliver, Thomas Sebeok, and Alexander Spoehr.

Procedures were established for making nominations for the offices of President, Vice-President and Executive Board Members, and an Elections Committee, consisting of Douglas Haring, R. L. Sharp, and the Secretary as *ex-officio chairman*, was appointed.

The Committee of International Cooperation in Anthropology of the National Research Council under the chairmanship of Melville Herskovits, a member of the Board, was named as a committee of the American Anthropological Association to represent the Association in international matters. The Board asked this committee also to take over the functions of the previous committee (discharged at the Chicago meeting) for the strengthening of democratic anthropologists in foreign countries. The Committee was also asked to study and make recommendations to the Board regarding requests from war-devastated countries for surplus publications of the Association.

It was voted to contribute $25.00 to the Inter-Society Committee for a National Science Foundation, this being the amount indicated as appropriate for an association the size of the AAA.

The Anthropological Society of Hawaii was officially affiliated with the Association.

Discussion and correspondence were held with members of the State Department concerning an invitation to the International Congress of Americanists to meet in the United States in 1949.

Frank H. H. Roberts, Jr., Marshall T. Newman, and Weston La Barre were appointed official representatives of the AAA to contribute reports to the section of the Scientific Monthly called "Science on the March." This feature, written by appointees of the sixty societies affiliated with the AAAS, will consist of articles each year that describe in non-technical style some significant advance in the field of science covered by the reporter's society.

J. Lawrence Angel was appointed official representative of the AAA to the annual meeting of the Archaeological Institute of America, held in New Haven on December 29–31, 1947.

A committee consisting of A. L. Kroeber, *chairman*, J. R. Swanton, and A. M. Tozzer was appointed to select the recipient of the Viking Fund Medal and Prize in Cultural Anthropology for 1947.

It was voted to change the style of type and color of the covers of the American Anthropologist and of the Memoirs and to introduce advertising into the American Anthropologist.

It was voted to have the programs for the annual meeting distributed to all Members and Fellows of the Association, whether or not they had signified an intention to attend the meeting, and to introduce advertising into the printed meeting programs, if feasible as a step toward defraying the printing and distribution cost.

Appointment was made of a Resolutions Committee consisting of Gilbert McAllister, *chairman*, L. S. Cressman, and A. I. Hallowell.

Florence Hawley and Thomas Sebeok were appointed to the Elections Committee to replace Douglas Haring and R. L. Sharp who were unable to serve in the tallying of the mail ballots.

Walter R. Goldschmidt and Joseph B. Birdsell were appointed as Editors of the News Bulletin.

Association participation in the AAAS Centennial meeting, to be held in Washington, D. C. in September, 1948, was discussed and steps were taken to appoint and make recommendations to a program committee for this meeting.

Approval was given to recommendations made by the Secretary, Treasurer and Executive Secretary mutually to re-allocate certain duties, records, files and maintenance procedures in the interest of greater efficiency and economy.

Approval was given to a recommendation made by the Secretary and the Treasurer to store certain of the Association's files and archives in a permanent place, preferably one of the Smithsonian Institution buildings.

It was agreed to interpret the word "year" in Article IV, Section 5 of the Constitution to mean fiscal year (which ends October 31), and further to understand this Article to mean that a Fellow in arrears in the payment of dues for two successive fiscal years will not receive mail ballots.

It was agreed to require a signature on the return envelopes used for polls of the Council when made by mail (Article V, Section 6 of the Constitution), on mail ballots concerned with Amendments to the Constitution (Article VIII), and on Referenda made by mail (By-Law titled "Referendum").

It was voted to charge a registration fee at annual meetings to help defray the local costs.

It was voted to accept the invitation extended in a letter from Professor T. F. McIlwraith to hold the 1948 annual meeting at the University of Toronto and the Royal Ontario Museum of Archaeology.

In addition, the Board voted to recommend favorably to the Council: By-Laws changes relating to husband-wife memberships, rates for institutional subscribers, and joint rates with other organizations; a proposal for the AAA to establish a committee on a Middle America Handbook; and the appropriation by the AAA of $500 for *CARE* aid to European anthropologists. (*See* "New Business" below.)

The Board wishes to report that the cooperation of the other officers of the Association during this difficult period has been magnificent. The Vice-President has participated in the deliberations and responsibilities of the Board. The Secretary has made an illuminating analysis of the functions carried on by previous secretaries of the Association and has performed his duties with unusual promptness and conscientiousness. The Treasurer has devised new and improved methods for keeping the books of the Association and has cheerfully carried a load that was much increased by the difficulties of mid-year transition and new business. The Editor has responded constructively to the numerous queries that have been addressed to him with reference to the publication activities of the Association. The Executive Secretary has entered into her task with enormous energy and creative imagination.

For the Executive Board,
CLYDE KLUCKHOHN, *Chairman*

REPORT OF THE SECRETARY

June–December, 1947

The report of the membership of the Association, as of December 27, 1947, is as follows:

Institution Subscribers	420
Members	864
Fellows*	408
Total	1,692

* 10 Life Members are included.

New Institutional Subscribers, 1947	28
New Members, 1947	290
New Fellows, 1947**	80
Total	398

** That is, in addition to the Council as constituted in 1946, the members of which became Fellows upon adoption of the Constitution.

The Association lost through death the following:

Roy F. Barton, Fred Edinger, Edgar Lee Hewett, H. Scudder Mekeel, Clark Wissler, George Grant MacCurdy	6
Removed through cancellation, resignation or for non-payment of dues	19
Total	25

The total membership reported as of November 30, 1946, (with no distinction made between Institutions, Members and Fellows) was 1,271; the Association has, therefore, a net gain of 421 since that date in Institutional Subscribers, Members, and Fellows.

The above figures do not include 92 Fellows-elect and about 150 Members pledged to joining the Association. It is expected that a great many of these will be enrolled as dues-paying Fellows and Members early in 1948.

Respectfully submitted,
D. B. STOUT, *Secretary*

The Council voted to accept the report of the Secretary.

REPORT OF THE TREASURER

July 1–October 31, 1947*

STATEMENT OF FUNDS—OCTOBER 31, 1947

Assets		
Cash on deposit	$21,752.63	
Petty Cash Fund	100.00	
Securities	5,028.72	$26,881.35
Fund Balances		
Operating Fund	3,936.98	
Permanent Fund	8,650.08	
Memoir Fund	3,385.69	
Carnegie Fund	10,908.60	$26,881.35

* The new Constitution and By-Laws changed the ending of the fiscal year from November 30 to October 31.

Cash Accounts—October 31, 1947

Cash in Checking Accounts

National City Bank of New York:		
Washington Square Branch	$ 489.16	
Madison Avenue Branch	2,881.28*	
Savings Bank of Mendocino Co.	670.27	
Savings Bank of Mendocino Co.	808.60	$ 4,849.31

Cash in Savings Accounts

Bank	*Fund*	*Amount*	
Savings Bank Mendocino Co., Ukiah, California—	Memoir	$ 1,667.58	
Savings Bank Mendocino Co., Ukiah, California—	Operating	141.61	
Savings Bank Mendocino Co., Ukiah, California—	Operating	2,547.09	
Bank of Willits, Willits, California—	Permanent	2,547.04	
Bank of Willits, Willits, California—	Carnegie	2,500.00	
Savings Bank Mendocino Co., Ukiah, California	Carnegie	2,500.00	
Coast National Bank, Fort Bragg, California—	Carnegie	5,000.00	16,903.32
Total Cash on Deposit			$21,752.63
Petty Cash Fund Applies to the Carnegie Fund			$ 100.00

* Funds Applicable as Follows:

Operating Fund	$ 88.85
Memoir Fund	1,718.11
Permanent Fund	1,074.32
	$2,881.28

Analysis of Cash Receipts and Disbursements

July 1, 1947 to October 31, 1947

(Exclusive of Carnegie Fund)

Receipts		
Remittances from previous Treasurer, J. Noon		$14,866.18
Inter-Bank Transfers		1,653.48
Subvention from Duke University		600.00
Subscription Agencies		
Renewals	$321.90	
New Subscriptions	109.35	431.25

Analysis (*contin.*)

Members AAA			
New Members	261.50		
Renewals	84.00	345.50	
Reprints		199.60	
Fellows		104.00	
AES		70.00	
Memoirs		61.00	
Sundry Receipts		136.26	
CSB		35.00	
SAA		20.00	
Total Receipts			$18,522.27
Disbursements			
Inter-Bank Transfer		$ 1,653.48	
Transfer to Carnegie Fund		2,500.00	
Secretary's Expenses		228.09	
Editor's Expenses		701.90	
Treasurer's Expenses		334.40	
Officers' Travel and Other Expenses		27.38	
Executive Board Expenses		510.68	
Memberships		38.00	
American Anthropologist		1,495.65	
Bulletin		86.91	
Memoir Fund Expense		1.75	
Total Disbursements			7,578.24
Cash Balances October 31, 1947 (Exclusive of Carnegie Fund)			$10,944.03

CARNEGIE FUND

August to October 31, 1947

Receipts			
From Carnegie Foundation		$10,660.50	
From AAA		2,500.00	
Total Receipts			$13,160.50
Disbursements			
Salaries		1,350.00	
Expenses		490.88*	
Travel		411.02	
Total Disbursements			$ 2,251.90
Balance October 31, 1947			$10,908.60

* Expenses include purchases of typewriter, desk and office files totaling $349.44.

STATEMENT OF CHANGES IN FUNDS

Operating Fund (Balances as submitted by J. Noon at June 30, 1947)		$ 8,480.47
Add:		
Income		
Subscription Agencies	$ 431.25	
AAA	345.50	
Reprints	199.60	
Fellows	104.00	
AES	70.00	
Interest on Bank Funds	37.91	
Sundry Receipts	136.26	
CSB	35.00	
SAA	20.00	
		1,379.52
		$ 9,859.99
Deduct:		
Expenditures		
Transfer to Carnegie Fund	2,500.00	
Secretary's Expenses	228.09	
Editor's Expenses	701.90	
Treasurer's Expenses	334.40	
Officers' Travel and other Expenses	27.38	
Executive Board Expenses	510.68	
Memberships	38.00	
American Anthropologist	1,495.65	
Bulletin	86.91	5,923.01
		$ 3,936.98
Balance consists of funds in the following banks:		
National City Bank of New York:		
Washington Square Branch	$ 489.16	
Madison Ave. Branch	88.85	
Savings Bank Mendocino Co.	2,547.09	
Savings Bank Mendocino Co.	670.27	
Savings Bank Mendocino Co.	141.61	
		$ 3,936.98

Statement of Changes in Funds

October 31, 1947

Memoir Fund			
Balance—June 30, 1947 as reported by J. Noon		$ 2,718.11	
Interest of Funds when remitted by J. Noon		8.33	
Sale of Memoirs		61.00	
Subvention from Duke University		600.00	
Total			$ 3,387.44
Expense—Check Book			1.75
Balance of Fund October 31, 1947			$ 3,385.69
Balance of Fund consists of:			
Funds deposited in Bank Mendocino County	$1,667.58		
Funds deposited in National City Bank	1,718.11		
Total		$ 3,385.69	
Permanent Fund			
Balance June 30, 1947 per report of J. Noon		$ 8,597.44	
Increase on Bond Values		33.72	
Interest on Funds		18.92	
Balance October 31, 1947			$ 8,650.08
Balance consists of funds on deposit:			
Savings Bank Mendocino County		$ 2,547.04	
U. S. Government Securities (at maturity value)		5,028.72	
National City Bank		1,074.32	
Totals		$ 8,650.08	

COMPARISON OF EXPENDITURES WITH THE BUDGET

	Budget	12/1/46 to 6/30/47[1]	7/1/47 to 10/31/47[2]	Total Expended	Balance
Secretary's Expenses					
Assistant	$ 125.00	$ 62.50	$ 90.00	$ 152.50	$ (27.50)[3]
Expenses	75.00	276.70	138.09	414.79	(339.79)
Editor's Expenses					
Assistant	2,000.00	1,100.02	666.66	1,766.68	233.32
Expenses	200.00	232.50	35.24	267.74	(67.74)
Treasurer's Expenses					
Assistant	600.00	340.00	200.00	540.00	60.00
Expenses	125.00	128.99	99.78	228.77	(103.77)
Transfer of Office			34.62	34.62	(34.62)
Travel Expenses—Sec'y, Editor, Treasurer	200.00	174.23	———	174.23	25.77
Travel Expenses representative Comm. Arch. Rem.	300.00	125.71	———	125.71	174.29
Memberships					
Am. Council Learned Soc.	35.00	———	35.00	35.00	———
Inter-Amer. Soc. for Anthro.-Geog.	3.00	———	3.00	3.00	———
Amer. Coun. on Ed.	10.00	10.00	———	10.00	———
Internat'l Inst. for Afro-Amer. Studies	3.00	25.00	———	25.00	(22.00)
Publications					
Amer. Anthropologist					
Printing	4,500.00	2,643.30	1,359.60	4,002.90	497.10
Reprints	440.00	283.40	116.48	399.88	40.12
Distribution	210.00	———	10.57	10.57	199.43
Storage	90.00	47.75	9.00	56.75	33.25
Promotion and Reorganization in general	1,000.00	186.23		186.23	813.77
Preparation of directory of anthropologists	500.00	500.00		500.00	———
President's expenses		10.83	12.88	23.71	(23.71)
UNESCO representative		33.19	14.50	47.69	(47.69)
Fellows' expenses		55.30			(55.30)
Interim committee		112.60		112.60	(112.60)
Executive Board		143.41	510.68	654.09	(654.09)
Bulletin			86.91	86.91	(86.91)
Totals	$10,416.00	$6,491.66	$3,423.01	$9,914.67	$497.83

[1] Expenditures for period from 12/1/46 to 6/30/47 from report of J. Noon.
[2] Expenditures for period from 7/1/47 to 10/31/47 from report of E. G. Aginsky.
[3] Figures in balance column in parentheses represent expenditures in excess of budget.

STATEMENT OF INCOME AND EXPENDITURES

Income	
For period from December 1, 1946 to June 30, 1947, per J. Noon's report	$ 8,491.44
For period from July 1, 1947, to October 31, 1947	1,379.52
Total	$ 9,070.96
Expenditures	
For period from December 1, 1946 to June 30, 1947, per J. Noon's report	$ 6,491.66
For period from July 1, 1947, to October 31, 1947	5,923.01[a]
Total	$12,414.67
Expenditures	$12,414.67
Income	9,070.96
Deficit	$ 3,343.71[b]

[a] Expenditures include $2,500 to Carnegie Fund.

[b] Deficit is inclusive of $2,500.00 grant to Carnegie Fund. If subvention to Carnegie Fund is excluded from expenditures, deficit is accordingly reduced to $843.71.

Respectfully submitted,
ETHEL G. AGINSKY, *Treasurer*

The Council voted to accept the report of the Treasurer.

REPORT OF THE AUDITING COMMITTEE

The undersigned, elected by the Council as an Auditing Committee, report that they have examined the Treasurer's accounts, as submitted for the fiscal year 1947, and have found them correct.

VERNE F. RAY, *chairman*, JOSEPH B. BIRDSELL, OMER C. STEWART

REPORT OF THE EDITOR

The American Anthropologist for 1947, Volume 49, contained 706 pages, almost exactly the same as Volume 48, and consisted of four numbers of 186, 188, 164, and 168 pages respectively. It contained 26 articles and one obituary, 27 Brief Communications, 60 Book Reviews, 62 pages of New Publications, and 18 pages of Notes and News, in addition to the Annual Report, the Annual Report of the Washington Society, the Index, the new Constitution and the List of Members. During the year 30 contributions were not approved for publication. The large number of book reviews is to be credited to Dr. A. I. Hallowell, the Book Review Editor, and the large coverage of new publications to the Editorial Assistant, Mrs. D. C. Donath.

Two memoirs were published during the year: No. 66, "Slavery During the Third Dynasty of Ur," by Bernard J. Siegel, 54 pages, which appeared in January as Part 2 of Vol. 49, No. 1; and No. 67, "On Culture Contact and Its Working in Modern Palestine," by Raphael Patai, 48 pages, which was published as Part 2 of Vol. 49, No. 4, in October. Dr. Patai paid a part of the cost of his memoir; Dr. Siegel's was published without subvention.

Four more memoirs have been accepted, and two, of unusually large size, will be published during 1948. These are: "The Aymara Indians of the Lake Titicaca Plateau, Bolivia," by Weston La Barre to appear in January; and "A Study of Archeology" by Walter W. Taylor, scheduled

for July. Subventions of approximately three-fifths and of practically full cost, respectively, have been secured for these.

With Volume 50, the American Anthropologist will appear in a new format, the first major change since the inauguration of the New Series in 1899.

Respectfully submitted,
J. ALDEN MASON, *Editor*

The Council voted to accept the Editor's report.

REPORTS OF COMMITTEES AND REPRESENTATIVES

M. J. Herskovits, Chairman of the AAA Committee on International Cooperation in Anthropology, presented the following report:

"During the past year, the Committee on International Cooperation in Anthropology with the aid of the Division of Anthropology and Psychology of the NRC of which it is also a Committee, held two meetings in Washington, D. C., on May 3 and November 1. Its activities may be summarized as follows:

"1. *Report on anthropology in other countries during the war.* This series, which has been appearing since 1945 in the American Anthropologist, was terminated by publication of reports on South Africa (by J. S. Harris), on the Philippines (by F. Eggan and R. F. Barton), and on the Arab World (by A. I. Tannous and W. N. Fenton). It can be recorded that the series has proved useful in many ways, that it has been republished in whole or part in various countries, and that many expressions of appreciation have been received from scholars cut off from their colleagues by the circumstances of the war for the help it has been to them in ascertaining happenings during the years of their isolation.

"2. *Aid for anthropologists in foreign countries.* This perennial problem has been discussed at every meeting of the Committee since its inception, particularly as regards the question of providing books and periodicals to those whose libraries were destroyed and who cannot afford to replace lost volumes or buy new ones. The members of the Committee, as individuals, have tried to do what they could, from sending personal copies of books to taking up a collection to buy a *CARE* package for the poverty-stricken family of a deceased colleague. It is apparent, however, that the problem is too vast in scope for any committee, not only as far as financing is concerned, but also as concerns the time it would take to administer any program of aid. The AAA has made available back stock of numbers of the Anthropologist in excess of 75 copies, and it is hoped to be able to distribute these on a "first come, first served" basis as soon as similar arrangements are made in the case of periodicals of the other anthropological societies.

"3. *Anthropological Congresses.* The Committee has been in correspondence with those charged with organizing international meetings of anthropologists. It has noted, with some concern, the paucity of representation from the United States at the recent meeting in Paris of the International Americanist Congress, and has considered the problem of assuring some representation at the forthcoming Brussels meeting of the International Congress of Anthropological and Ethnological Sciences. The difficulty seems to be in the fact that, while funds can be obtained to bring foreign scientists to this country for a meeting, grants to send American anthropologists to meetings abroad are not ordinarily given. This means that American representation is limited to those whose private means permit them to defray the heavy costs of present-day travel, or who can travel as representatives of governmental or other organizations.

"4. *International Directory of Anthropologists*, third edition. Grants from the AAA of $500 and from the Viking Fund of $1,500 have permitted work to go forward on this project. Contributing Editors have provided up-to-date lists of anthropologists in 33 countries outside the United States to a total of over 1,600 names. Forms for the collection of data have been prepared, and these, with covering letters requesting the requisite biographical materials, are now in the mails. The problem of obtaining the widest circulation for these directories, especially in countries where

anthropologists cannot afford to buy them or cannot obtain exchange to pay for them, is a difficult one. Acting on a suggestion by Dr. Frederica de Laguna, American anthropologists will be given the opportunity to subscribe for one or more extra copies to be sent to colleagues abroad who otherwise would not hope to obtain them. It is the intention of the Committee to hold the price of the Directory to between $2.00 and $3.00. Fellows of the AAA and other professional anthropologists in this country will receive the biographical blanks shortly after the beginning of the year, and also blanks on which they can subscribe for copies for themselves and others. It is urged that the blanks be filled out fully and returned promptly, and it is hoped that the Fellows will be generous in subscribing for copies to be sent to anthropologists abroad."

A. I. Hallowell, Chairman of the Division of Anthropology and Psychology of the National Research Council, announced that a report of other activities of the Division would appear in the American Anthropologist, Vol. 50, No. 1, pp. 175–177, January–March, 1948.

The following report is composed of excerpts from written statements submitted by Ralph L. Beals and Wendell C. Bennett, two of the Association's three representatives to the Social Science Research Council.

"The Social Science Research Council held two meetings of the Board of Directors, one in New York March 29–30, the second in Williamsburg, Virginia, September 8–11. Representatives Beals and Bennett were present at the March meeting and Beals, Bennett and W. D. Strong were present at the September meeting. All three also attended the conference on the Study of World Areas sponsored by the Council, November 28-29-30 in New York, and individually attended meetings of various sub-committees.

"One of the major problems of the Social Science Research Council this year has been that of executive leadership created by the resignation of the present Executive Director, Donald Young, to take effect next March. At the March meeting a special committee was appointed to survey the aims, organization, operation and executive leadership problems of the Council. At the September meeting a committee was named to select a new Executive Director. Wendell Bennett served on both of these special committees.

"At the March meeting it was decided by the Board of Directors to use part of the surplus funds of the Council to expand its activities, hoping that this expansion would be sufficiently fruitful that sources of support would be found to maintain the new activities. One aspect of this expansion was adding to the regular staff persons who would be familiar with each of the major fields covered by Council activity. Charles Wagley has been appointed on a half-time basis to cover the activities in anthropology and related fields, although, thus far, much of his time has been given to the activities of the Committee on World Area Research.

"Much of the activity of the Social Science Research Council is by means of committees, some of which conduct extensive research programs. These programs are usually financed by special grants which are administered through the Council. Of these committees the one with perhaps closest relationship to the interests of anthropologists is the Committee on World Area Research, of which representatives Beals and Bennett are members. This committee sponsored an inquiry into activities on university campuses which was published during the past year, "Area Studies; with Special Reference to Their Implication for Research in the Social Sciences," Pamphlet No. 3, by Robert B. Hall. This committee also sponsored a conference as mentioned above with the aid of a grant from the Carnegie Corporation which was devoted largely to objectives, research, and teaching problems in area studies. An attendance of over 100 was recorded and a great many problems connected with area research were clarified. Anthropologists probably formed the largest single group represented at the conference.

"Another activity of the committee is the establishment of a special fellowship program for training and research in world areas, under a grant from the Carnegie Corporation. These fellowships will give opportunities for the training, on the pre-doctoral and post-doctoral level, of new personnel, for specialists in various disciplines to familiarize themselves with an area, and also for

refresher visits to areas by established scholars. It should be made clear that these Area Fellowships are quite distinct from the regular research fellowships which are still being offered at the pre-doctoral and post-doctoral level by the Council.

"The Council in collaboration with the three other national research councils has been invited to assist in the administration of Fulbright grants on the professional and research level. Appropriate organization to effect this administration is now being considered. Dr. Wagley has been participating in these arrangements.

"Some related activities carried on by the Council which may also interest anthropologists include the work on the reduction of inter-group tension, on which a report was published by Robin M. Williams, Jr. this year. Gordon W. Allport also published a report on the use of personal documents in psychological sciences. The Handbook of Latin American Studies is continuing, sponsored in part by the Social Science Research Council. Of rather broad interest to many may be the various studies made on public reaction to the atomic bomb and problems of defense against the bomb.

"Non-committee activities of the Council include a major study of factors affecting the supply of social science personnel and an analysis of scholarship programs. Another activity of considerable importance has been the gathering and shipping of considerable quantities of books in the social sciences for European libraries. Matters discussed which may develop interest for anthropologists are the possibilities of a thorough investigation of the scientific basis of various projective techniques. The problem of relations of the Council with professional associations has received considerable discussion although no concrete developments have yet occurred.

"The needs for greater publicity for the activities of the Council were discussed at meetings. It is clear that many social scientists are ignorant of the operation of the Council and of its real functions and activities. As a partial remedy for this problem the Council is now publishing "Items," a twelve-page pamphlet issued periodically which reviews Council activities and often also contains one or two articles on Council activities of considerable interest.

"There is no question but that the Social Science Research Council is performing a valuable function in developing social science research. It is also probably true that a great deal more could be accomplished. However, expansion of activities depends partly on financing and perhaps in an even greater measure on interest and support given by individual social scientists to the Council and its activities. It is undoubtedly true that expansion of the Council's activities should be in terms of forwarding the needs of social science as a whole and acting as a representative, in the last analysis, of the needs and wishes of individual social scientists.

"It perhaps should be pointed out particularly that the major activities, as has been indicated, are carried on through committees. The formation of committees by the Social Science Research Council primarily originates with the interest and activity of a group of social scientists with common interests who demonstrate that there is a need for a committee. Very rarely do such committees originate by the activity of the Council or of the administrative staff of the Council. Clearly, it is up to people who believe that the Council should have a committee operating in a field or on a topic to take the initiative in getting it established."

John M. Cooper, one of the two AAA representatives to the American Council of Learned Societies, presented the following report:

"The chief ACLS 1947 activities of interest to members of the AAA are probably the following:

"1. The new By-Laws (or Constitution) of the ACLS voted at the annual meeting of Jan. 30, 1947 and approved by a majority of the constituent societies and so effective Mar. 22, 1947, make the following major changes: (a) Eight members at large to be added to Board of Directors; (b) Each constituent society to appoint one delegate only (instead of two as previously),—the delegate appointed in 1944 to serve to end of 1948, without successor; the delegate appointed in 1946 to serve to end of 1950, when his successor will be appointed; (c) At least one session of the annual Conference of Secretaries of the constituent societies to be held jointly with the Board of Directors.

"2. Professor Cornelius Krusé, of Wesleyan University, took office in September as Executive Director of the ACLS, succeeding Dr. Leland.

"3. Dr. Harry Hoijer was appointed representative of the ACLS to the meeting of the International Congress of Americanists in Paris, August 24–31, 1947.

"4. The ACLS voted to appropriate from its Planning and Development Funds the sum of $1,000 to the Committee for the Recovery of Archaeological Remains."

J. O. Brew, AAA representative to the Committee for the Recovery of Archaeological Remains, submitted the following report which was read in his absence by E. W. Haury:

"It is with great pleasure that as your representative on the Committee for the Recovery of Archaeological Remains I am able to place before you this year a record of considerable achievement. After two years of talk, meetings, politics and planning, the program is actually under way in all parts of the country.* Surveys have been completed or are in progress in all important archaeological regions, from the South Atlantic Coast to the Pacific Northwest and from the Gulf of Mexico to the Canadian Border. In addition to the surveys, excavations have been undertaken in some areas, although major excavation projects will not be instituted until spring. The work continues under the able direction of Frank H. H. Roberts, Jr., whose tireless application to the many and recurring scientific, administrative, technical and financial problems has contributed largely to its success.

"The material of this report has been assembled throughout the year by the Committee but it has received emphasis and especial meaning through two experiences last fall. In company with Frederick Johnson, President of the Society for American Archaeology and Secretary of the Committee, I spent a week in the Missouri Valley during September. We saw the efficient laboratory which has been set up by Waldo Wedel at the University of Nebraska in Lincoln; visited sites and field parties in an 800-mile trip through parts of Nebraska and South Dakota; and discussed many problems with the Smithsonian staff and local men at the University, and with regional officials of the National Park Service at Omaha. This short week in the Valley provided us with a greater comprehension of the immensity of the task ahead and of the extent of the obligation which, as archaeologists, we are facing than has any previous event in the varied history of the Committee. Deep sites, beneath 20 to 60 feet of silt and loess, rich in the record of early man; towns with 25 to 100 or more circular depressions, some of them as large as Chaco Great Kivas, the whole surrounded by an embankment and fossa; village sites with tipi rings of the early historic Sioux; forts and settlements of the first Europeans; all going under water in the Missouri!

"The second major source of information was the annual meeting of the Committee in October with representatives of the government agencies involved, to receive reports of the state of the project and to discuss plans for the future. In a two-day session, officials of the Smithsonian Institution, the National Park Service, the Corps of Engineers of the War Department, the Bureau of Reclamation of the Department of the Interior, the Geological Survey, and the Bureau of the Budget submitted to American archaeologists and anthropologists a record of a real beginning. The following statistics briefly summarize that beginning.

Field Work

"Surveys already completed will be listed by region with the names of the archaeologists in charge.

1. The far Northwest; 14 projects, 163 sites, Philip Drucker.
2. Central Valley of California; 6 reservoirs, 59 sites, Frank Fenenga; and 5 reservoirs, 66 sites, Clarence E. Smith.

* Aims, theories, administrative details and the coöperative agreements among the various Federal agencies involved are listed, described and discussed in Brew, J. O., and others, "Symposium on River Valley Archaeology," *American Antiquity*, Vol. 12, No. 4, pp. 209–225, 1947.

3. Southeast; numerous projects not yet arranged in permanent administration grouping; reported to the October meeting by Gordon R. Willey.
   a. Georgia: Allatoona Basin—Etawah River, 206 sites, J. R. Caldwell.
   b. Virginia: Roanoke River—Bugs Island, 94 sites, Carl F. Miller.
   c. North Central Tennessee: Caney Fork, 39 sites, G. R. Willey; a real emergency with the water scheduled to rise in June, 1948.
   d. Georgia: Savannah River, above Augusta,—Clark Hill, survey under way, Caldwell and Miller.
   e. Texas: Hord's Creek, 11 sites, R. L. Stephenson.
   f. Texas: Addicks Dam—near Houston, 9 sites, J. B. Wheat; emergency, 2 sites were excavated with labor furnished by the Corps of Engineers, Galveston District; 3 more to be excavated by the Houston Museum.
   g. Texas: Whitney Basin, 61 sites, Stephenson.
   h. Texas: Neches River—Dam "B," now under survey, Stephenson.
   i. Oklahoma: Hula Reservoir, 4 sites, D. J. Wenner.
   j. Oklahoma: Fort Gibson Reservoir, 24 sites, Wenner.
   k. New Mexico: near Tucumcari, 2 rock shelters, emergency excavation, Herbert Dick, final report completed.
4. Missouri Basin: field survey parties have been at work in this vast area for 2 seasons; 3 parties for 8 weeks in 1946 and 4 parties from April to November in 1947. One of the latter was a paleontological survey under T. E. White.

"The archaeological parties have surveyed 525 sites, in Nebraska, North and South Dakota, Wyoming and Montana. Of these, during 1947, 121 were submitted to Intensive Survey. Intensive Survey may include test digging and small scale excavation. This extension of survey technique became necessary on certain projects where construction is under way or imminent.

"An example of one of the startling vicissitudes of River Valley archaeology is Medicine Creek in Nebraska. From a low priority rating it was shifted to top priority over-night and construction started. Flexibility is an essential, and Wedel was able, in late August, when this change occurred, to assign M. F. Kivett to Medicine Creek for excavation in three sites. Flexibility is needed elsewhere than in the field, however. A major problem for the spring in Washington will be to find funds for the emergency large-scale excavations in Medicine Creek next summer which were not provided in the estimates for 1948 and 1949 because of the low priority rating of that project when the budget schedules were made up.

"The Lincoln laboratory in the Love Library at the University of Nebraska already has a splendid record, including:

   a. Distribution of 33 illustrated, mimeographed preliminary reports (2 in paleontology)
   b. Cleaning and cataloguing of over 43,000 specimens up to October 15, 1947. More than 5,000 a month were handled last summer.

The laboratory staff consists of a man in charge, one assistant and three to four part-time people for washing, repairing and cataloguing. Members of the field staff work in the laboratory during the winter months.

"The operations listed above are the Smithsonian projects, directly under Frank H. H. Roberts in the Bureau of American Ethnology, manned by Smithsonian personnel and financed by government funds transferred to the Smithsonian by the National Park Service. There are others.

"The Park Service continues its vital interest and amazing coöperation. In previous reports and in the published papers of our Chicago symposium the great debt which, as archaeologists, we owe to the Park Service has been pointed out. As the record of the past three years unfolds and the results described above begin to pour in, it becomes possible to evaluate the extensive contribution to American archaeology made by the leaders of this truly public service: Newton B.

Drury, Director; A. E. Demaray, Associate Director; Ronald F. Lee, Chief Historian; and Herbert E. Kahler, Assistant Chief Historian.

"In addition to the valuable, in fact life-giving, support from the head office, the regional organization of the Park Service has been useful in the field. The regional offices provide liaison between the Smithsonian archaeologists and the divisional officers of the Bureau of Reclamation and the Corps of Engineers. This liaison functions in many important ways, such as procuring detailed maps of areas to be flooded; preventing unauthorized excavation; advising of changes in construction priorities, etc. The archaeologists in the four regional offices, J. P. Harrington, J. D. Jennings, E. K. Reed, and L. R. Caywood, work closely with the Smithsonian field men.

"In addition, the Park Service had assumed complete responsibility for the archaeological work in the pool area of the Davis Dam on the Colorado River in Arizona and Nevada before the Smithsonian's River Basins Survey had been inaugurated. Gordon Baldwin has located 155 sites, 15 of which are to be excavated completely or in part. Approximately half of the excavation has been completed.

"The U. S. Geological Survey has been helping in the identification of deposits and the reporting of paleontological remains.

"The construction agencies of the Federal Government, the Corps of Engineers and the Bureau of Reclamation continue to aid the program in many ways, both in Washington and in the field. General directives from Washington to the field offices of these agencies instruct that all possible aid be given. As excavation replaces the survey phase, the value of this assistance begins to appear. Instances have already occurred wherein the loan of equipment and men has salvaged sites which otherwise would have gone under water. In other cases, work has been stopped and Federal or state archaeologists notified when artifacts or burials have been encountered by construction crews.

Non-Federal Coöperation

"One very important aspect of the project remains to be described. In previous reports it was emphasized that this is not another W.P.A. Archaeology is set up on its own feet. The salvage of significant archaeological record is the only object of the program. The Federal Government can not do it all. The job is too big. Furthermore the Government will do very little unless concrete evidence of professional and public interest can be shown. That interest has been demonstrated and this Association can take pride in the support its membership has provided.

"The following assistance has been given by state and private institutions, mostly on the basis of formal coöperative agreements with the Smithsonian, although in a few cases entirely independently. The institution and the nature of the coöperation will be listed, briefly.

University of Nebraska; office, laboratory and storage space; survey.
State Museum, Nebraska; survey and excavation of paleontological sites.
Nebraska State Historical Society; survey and excavation; Medicine Creek.
University of Kansas; survey and excavation; Fall River and Kanapolis.
University of Colorado; survey; 9 reservoirs.
University of Denver; survey; 13 reservoirs.
Western State College, Gunnison, Colorado; survey; 12 reservoirs.
University of North Dakota; survey and excavation.
North Dakota Historical Society; survey and excavation.
University of Missouri; office and laboratory space offered; survey.
University of Oklahoma; office and laboratory space; survey; 2 reservoirs.
University of Texas; office and laboratory space; some survey assistance; loan of photographic and other equipment.
Houston Museum, Texas; excavation; Addicks Dam.
New Jersey State Museum; survey records.
Pennsylvania State Historical and Archaeological Commission; survey.

Ohio State Museum; survey and excavation.
University of Kentucky; survey and excavation.
Illinois State Museum—University of Chicago; survey of Illinois Basin started but not yet completed.
Alabama State Museum; office and laboratory space; survey.
University of Georgia; survey.
University of Washington; survey.
University of Oregon; office, laboratory and storage space; survey.
University of California; office, laboratory and storage space; made files on known sites available.
San Diego Museum; survey; Bill Williams River project in Arizona; undertaken but not yet done.
And finally the Archaeological Survey Association of Southern California has completed surveys of 3 basins. The Association is made up of 4 museums: Southwest Museum, Los Angeles County Museum, San Diego Museum and Balboa Museum.

"There may be other coöperative agreements in force by now. In addition, many other institutions have provided information in reply to letters from Roberts. This is an excellent record and it must be continued if the job is to be done.

"In many valleys we are now going into major excavation programs and the costs will mount rapidly. Some of the coöperating institutions have stated that they could give much more effective aid if financial assistance could be provided them. I can say nothing about this at present beyond the fact that there is general agreement as to the truth of that statement. The amount of work before us in the excavation program can not even be predicted. We still do not know how many more projects will develop. It has been estimated that five years more will be needed, at our present rate of operation, to complete merely the preliminary site surveys of the dams already authorized by the Congress. I am sure that every effort will be made to work out means of utilizing to the fullest possible extent the special abilities and potentialities of the coöperating institutions.',

Margaret Mead, AAA representative on the Committee on Sponsors of the National Conference on Family Life, submitted the following report, which was read in her absence by President Kluckhohn:

"The National Conference on Family Life has been formally organized with Mr. Erik Johnson as Chairman of the Board of Trustees, and Mr. Ernest Osborne of Teachers College as Program Coordinator. A meeting of the sponsoring organizations was held in New York on October 19th, in preparation for a meeting of the Technical Committee—of which I am also a member—in Washington on October 30th and 31st, at which time the program was approved for the Conference which is to take place May 6th, 7th, and 8th, 1948, in Washington, under White House auspices. Each sponsoring organization was asked to make a contribution and, at the recommendation of the Executive Board of the American Anthropological Association, the sum of $25 was contributed. The estimated budget for the Conference is $75,000.

"Action of the Association is needed to appoint a representative to the meeting of the sponsoring organizations in New York, at the Hotel Pennsylvania on February 25th, and a representative to the Conference itself, to be held in Washington May 6th–8th. It has been suggested that the best coordination will be obtained if this is the same person.

"Contributions to the program are asked from Association members who are currently engaged in any form of research on the family life in the United States, urban or rural, majority or minority group. Anyone having such material which should be contained in the working papers of the Conference should communicate directly with me."

Omer C. Stewart, AAA representative to the Mountain-Plains Regional Conference of *UNESCO*, presented the following report:

"The Mountain-Plains Regional Conference of *UNESCO*, the first such regional conference in the United States, was held in Denver in May 1947. Mr. Frederic H. Douglas and I were asked by President Benedict to represent the American Anthropological Association. Although the general interest and the many resolutions passed by the 1,700 delegates indicated a broad and enthusiastic support of the principles of *UNESCO*, there were only two features of the conference of special concern to anthropologists.

"The first was a resolution by the physical and biological scientists expressing disapproval with the expenditure of such a large part of the *UNESCO* budget on the Amazonian project. The project has since received official approval at the Mexican meeting of *UNESCO*, so that the vote of the Regional Conference is no longer of interest.

"The second point of interest to us was the recognition by nearly all sections of the conference of the need on the local level of education and experience to improve intergroup, especially interracial, respect and understanding. The representatives of the press and radio, women's clubs, farmers, businessmen, physical and biological sciences, as well as the social sciences and the religious groups, passed resolutions which indicated a general awareness of the need to greatly improve relationships between ethnic, religious and cultural groups in all communities in the United States as an essential step in successful American participation in the United Nations."

J. Lawrence Angel, AAA delegate to the annual meeting of the Archaeological Institute of America, submitted the following report:

"The 49th General Meeting of the Archaeological Institute of America was held at Yale University, December 29, 30, and 31, 1947, in conjunction with the American Philological Association and the Linguistic Society of America, and was attended by a capacity crowd of archaeologists and classicists. The AIA meeting was opened by its President, Professor Sterling Dow of Harvard, with the Council's business session which noted especially the addition of over 500 new members since 1945, the widespread itineraries of AIA speakers in the U. S. A. and the newly initiated summaries of Old World and New World research in the American Journal of Archaeology.

"Twenty-four papers were presented, ranging from an exhibition of visual education methods, detailed reports of American excavations at Athens and Corinth in 1947, and expositions of epigraphic architectural, and sculptural problems to questions of religious and social change in relation to economic and military factors and migrations in the Homeric and other periods. Dr. Oscar Broneer, acting director of the American School for Classical Studies at Athens, showed his colored motion picture of life in Greece and of American excavations in 1947. The papers included an address on Epicureanism by Professor Norman W. DeWitt of Yale, excavation reports by Homer Thompson and Oscar Broneer, and a symposium on the Homeric period by J. F. Daniel, Editor of the AJA., O. Broneer, and H. Wade-Gery of Oxford University.

"Over half of the papers dealt directly with the social interpretation of archaeological data, thus answering fully certain past criticisms by social anthropologists of the aims and results of both Classical and Americanist archaeologists."

NEW BUSINESS

The Executive Board strongly recommended to the Council that the Association appropriate $500 to be used for *CARE* aid for European anthropologists, the expenditure to be carried out by the AAA Committee on International Cooperation in Anthropology. The Council voted unanimously that this appropriation be made.

It was voted to appropriate $600 toward the continued support during 1948 of the Committee for the Recovery of Archaeological Remains.

Ralph Beals, on behalf of the Executive Board, presented the following recommendations for the 1948 budget:

A. Expenses of Officers and Representatives of the American Anthropological Association

1. Secretary's Expenses		
Assistant	$ 175.00	
Office Expenses	250.00	$ 425.00
2. Editor's Expenses		
Assistant	2,500.00	
Office Expenses	150.00	2,650.00
3. Treasurer's Expenses		
Assistant	600.00	
Office Expenses	175.00	
Transfer of Records	50.00	
C. P. A. Services	75.00	900.00
4. Traveling Expenses of Secretary, Editor and Treasurer to Annual Meeting	300.00	300.00
5. Traveling Expenses of Representative on Committee for Recovery of Archaeological Remains	720.33	720.33
B. Memberships		
1. American Council of Learned Societies	35.00	
2. Inter-American Society of Anthropology and Geography	3.00	
3. American Council on Education	10.00	
4. International Institute of Afro-American Studies	3.00	51.00
C. Publications		
1. American Anthropologist		
a. Printing and Illustration	6,200.00	
b. Reprints	440.00	
c. Distribution	300.00	
d. Storage and Insurance	90.00	7,300.00
2. News Bulletin	250.00	250.00
D. Executive Secretariat		
1. Maintenance of Central Office	$ 500.00	$ 500.00
E. Special Charges		
1. Support of Committees and Conferences, etc.	50.00	
2. *CARE* Appropriation for European Anthropologists	500.00	550.00
F. Promotion and Reorganization		
1. Promotion and Reorganization in general	1,000.00	1,000.00
G. Annual Meeting Expenses	100.00	100.00
Total		$14,476.33

The Council voted to accept the above recommendations for the 1948 budget.

The Executive Board recommended the following proposal to the Council for favorable action. It was read to the Council by Harry Tschopik on behalf of Gordon Ekholm, who wrote it, but could not be present.

"It is generally agreed that the organization of the *Handbook of South American Indians* has been one of the most successful enterprises in the field of American anthropology in recent years. Its completion makes apparent the need for a similar work covering the field of Middle America. The time would appear to be ripe to consider the organization of such a handbook.

"The need for such a handbook arises primarily from the great complexity of the history of the Middle American cultures and from the quantity and confusing nature of the archaeological, historical, and ethnological data available. This great complexity of the area and of its problems results in the situation that most workers in the field are specialists in only certain aspects of its study, and some kind of a consultive volume or guide becomes more and more necessary. In a handbook this specialized knowledge could be pulled together and research would proceed in a more orderly manner. Furthermore, Middle America would become more accessible to non-specialists, who at the present time find it an area exceedingly difficult to approach.

"This appears to be a good time to attempt writing a general handbook on Middle America. The more general and interpretive studies of the last decade have for the first time provided a framework within which the former scattered and isolated data can be pulled together and evaluated. There is no lack of material. Other than the large amounts of information available in published form, there is also much that is unpublished in the notes and incompleted studies of many investigators who would be willing to contribute to the handbook. Potential contributors to such a handbook include about fifty scholars in this country and about an equal number in Mexico and the Central American Republics, where, due to aid given by American foundations, the body of professionally trained workers has grown considerably in recent years.

"In consideration of the above, we, the undersigned*, feel that steps should be taken to promote the realization of a Middle American Handbook project. We propose that this body go on record as favoring such a project and that a committee be appointed to explore all possible means of its organization."

The Council voted approval of this proposal and directed the Board to appoint an appropriate committee.

The Resolutions Committee, J. Gilbert McAllister, *chairman*, Luther S. Cressman and A. I. Hallowell, presented the following resolutions, which were adopted unanimously by the Council:

1. *Be it resolved:* That the American Anthropological Association express its appreciation to President John P. Wernette, Comptroller T. L. Popejoy and others of the Administration of the University of New Mexico for their most cordial hospitality, and their generosity in placing at the disposal of the Association all facilities of the University.

2. *Be it resolved:* That the American Anthropological Association convey to members of the Local Arrangements Committee, Edward Castetter, Paul Reiter and particularly to its chairman, W. W. Hill, the sense of indebtedness which the Association feels for the extraordinary effectiveness with which they handled the details of the meeting and created an unusually hospitable atmosphere.

3. *Be it resolved:* That the American Anthropological Association express its gratitude to the New Mexico State Museum, the Laboratory of Anthropology, and to Sylvanus G. Morley, *chairman*, Albert Ely, Boaz Long and Shirley Stubbs, the committee at Santa Fe, for so successfully making arrangements for the meeting in their city.

4. *Be it resolved:* That the American Anthropological Association tender its sincere thanks to Miss Amelia White for her gracious hospitality.

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* Several copies of this statement were circulated as a petition during the Council meeting and a great many signatures were thereby appended.

5. *Be it resolved:* That the American Anthropological Association express its appreciation to members of the Program Committee, Loren C. Eiseley, *chairman*, William R. Bascom, Gordon T. Bowles, Gordon F. Ekholm, Douglas Oliver, Thomas Sebeok and Alexander Spoehr, for the energy and efficiency with which they accomplished the complex task of coordinating the program of the Association and its affiliated societies.

6. *Be it resolved:* That the American Anthropological Association convey to the Carnegie Corporation its appreciation of the material implementation of the reintegration of the various branches of anthropology which their grant has forwarded, and likewise express its belief that the success of the Albuquerque meeting reveals the fruitfulness of the trend which is in progress.

7. *Be it resolved:* That the American Anthropological Association express its deep regret at the passing, since the last meeting, of the following members, several of whom have been with the Association from its earliest years: Roy F. Barton, Fred Edinger, Edgar Lee Hewett, George Grant MacCurdy, H. Scudder Mekeel, and Clark Wissler.

William R. Bascom submitted to the Council the following resolution which was unanimously adopted:

"The Council of the American Anthropological Association assembled in Albuquerque, New Mexico, December 29, 1947, after receiving at its Folklore Symposium a report from the Sociedad Folklorica de México, respectfully requests the authorities of the Universities of Mexico to consider the establishment, on an official basis, of folklore studies and the creation of supplementary institutes of research organizations. The expansion of folklore studies in Mexico, where there is such a wealth of folklore materials, could not but contribute greatly to a closer cooperation between the institutions of higher learning of both countries."

The Executive Board recommended the following amendments to the By-Laws, all of which were passed unanimously by the Council:

The By-Law titled *Subscribers:*

Amend by deleting "individual person" and "$6.00" and adding "$9.00 after January 1, 1949."

The By-Law titled *Dues:*

SECTION 1. MEMBERS. To substitute for the first paragraph the following: "Except as otherwise provided, the annual dues of members shall be $6.00. The Executive Board shall be empowered, however, to make arrangements for reduced joint memberships and subscriptions with regional divisions of the Association and with other professional societies and associations."

And to add as a second paragraph,

"In case husband and wife are both eligible to membership in the Association, they may hold a joint membership, by payment of the annual dues for a single member, provided that only one copy of any publications of the Association shall be furnished such joint memberships."

SECTION 2. FELLOWS. To delete the first sentence and substitute the following two sentences:

"The dues of Fellows, including Liaison Fellows, shall be $3.00 in addition to membership dues. In case husband and wife are both Fellows of the Association, they shall pay joint membership dues, plus $3.00 each for Fellowship dues."

REPORT OF THE ELECTIONS COMMITTEE

In accordance with procedures established by the new Constitution, a mail ballot was held during the 30 days prior to the annual meeting. The following officers were elected:

President: ..... Harry L. Shapiro
Vice President: ..... Loren C. Eiseley

Executive Board Member 1948-49-50:.....Emil W. Haury (to succeed M. J. Herskovits)
Executive Board Member 1948-49-50:.....Wendell C. Bennett (to succeed C. F. Voegelin)

Two amendments to the Constitution were voted almost unanimously in the same mail ballot, as follows:

ARTICLE IV—*Membership*

Present Section 4 and Section 5 shall be renumbered Section 6 and Section 7, respectively. New Sections 4 and 5 shall be:

"SECTION 4. LIAISON FELLOWS. Liaison Fellows may be admitted who

(1) Hold a Ph.D. or equivalent degree in a related subject and
(2) Have demonstrated an interest in the problems of anthropology or in the relations between anthropology and their field of major interest.

"Liaison Fellows shall pay the same dues as Fellows and shall have all the privileges of other Fellows except that they may not hold office. It is expected that they will contribute to the exchange of information and the development of common interests between anthropology and their field of major interest."

"SECTION 5. FOREIGN FELLOWS. Members permanently residing outside the United States or Canada who meet the qualifications of Fellows may be elected Foreign Fellows by the Executive Board. Foreign Fellows shall not be required to pay the special dues of Fellows. They shall have a vote only when in actual attendance at a meeting of the Council and shall not be eligible to hold office in the Association. They shall receive all publications of the Association."

Of the 380 ballots mailed to Fellows in good standing, 288 were returned. Of these, 8 were cast out for lack of signature on the envelope and 5 were cast out for improper or indecipherable marking.

Respectfully submitted,
D. B. STOUT, *chairman ex-officio*, FLORENCE HAWLEY, THOMAS SEBEOK

ANNUAL DINNER

The annual dinner, held on December 29th at the Hilton Hotel, was attended by 267 persons.

President Ruth Benedict gave the Presidential Address and President Clyde Kluckhohn acted as Discussant.

Walter Dyk, on behalf of the Viking Fund, presented the Viking Fund Medal and Prize in Cultural Anthropology to Robert H. Lowie.

Compiled by
D. B. STOUT, *Secretary*

AMERICAN ETHNOLOGICAL SOCIETY REPORT

The following officers were elected for the year 1948 at the annual meeting of the American Ethnological Society, held January 13, 1948, at the American Museum of Natural History, New York City:

President, Esther S. Goldfrank; *1st Vice-President*, Margaret Mead; *2nd Vice-President*, Julian H. Steward; *Secretary and Treasurer*, Dorothy L. Keur; *Directors*, Burt W. Aginsky, Gordon Ekholm, Carl Withers; *Editor*, Marian W. Smith.

REPORT OF THE SECRETARY

Membership: At the end of 1947, the society had 13 life members, 162 affiliate members, 67 student members and 16 participating members, making a total of 258 active members. This is an increase of 15 members over 1946.

The society lost through death Dr. Clark Wissler, a former president; Dr. George Grant MacCurdy; and Dr. H. Scudder Mekeel.

Twenty-seven new members were voted into the society.

Meetings: Four open meetings were held during the year at the American Museum of Natural History, New York City.

In January: Felix di Giovanni gave an illustrated lecture on the Guahibo Indians of Colombia, S. A.

In March: Morris Swadesh spoke on Nootka Warfare.

In May: The first Annual Students' Conference was held.

In November: Dr. Warner Muensterberger spoke on Psychological Implications of the Modern Interest in Primitive Art.

Respectfully submitted,
ESTHER S. GOLDFRANK, *Secretary*

REPORT OF THE TREASURER

January 1, 1947 to December 31, 1947

A. Operating Fund

1. *Receipts*

Balance in checking acct. 1/1/47			$1,564.08
(uncommitted balance $1,502. 80)			
Balance in Bowery Savings Bank 1/1/47			313.72
Dues received			1,878.00
Sale of publications			180.58
Interest received			
U. S. Treasury bonds	$36.25		
American Telephone and Telegraph	90.00		
Savings account	19.14		
		145.39	
Sale of Amer. Tel. & Tel. rgts		8.68	
Contributions to Publication Fund	$ 300.00		
	1,260.00		
		1,560.00	
			$5,650.45

2. *Expenditures*		
Dues to Amer. Anthropological Assoc.	1,131.00	
Operating expenses	149.38	
Cost of publications	2,652.86	
Boas Fund	172.50	
		4,105.74
3. *Balance*		1,544.71
4. *Distribution of Balance*		
In checking account Dec. 31, 1947	411.85	
In savings account Dec. 31, 1947	1,132.86	
		1,544.71
B. Committed funds as of Dec. 31, 1947 (Boas Fund)	172.50	
C. Uncommitted balance, Dec. 31, 1947		1,372.21
Plus interest due on U. S. Treasury bond #G1936499m		13.75

Final Statement, December 31, 1947

D. Permanent Fund		
10 shares American Telephone and Telegraph 9% preferred, carried at cost	$1,568.35	
7 U. S. Treasury bonds, Series G	2,000.00	
		3,568.35
Permanent Fund, Dec. 31, 1946	$3,568.35	
Permanent Fund, Dec. 31, 1947	$3,568.35	

Respectfully submitted,
ESTHER S. GOLDFRANK, *Treasurer*

REPORT OF THE EDITOR

Distributed to members:

Monograph X: Joseph Greenberg, *The Influence of Islam on a Sudanese Religion*. ix, 73 pp.

Edited and sent to press:

Monograph XI: Margaret Lantis, *Alaskan Eskimo Ceremonialism*.

Monograph XII: Abraham L. Gitlow, *Economics of the Mount Hagen Tribes, New Guinea*.

Monograph XIII: Ruth Underhill, *Ceremonialism in the Greater Southwest*.

Monograph XIV: David H. French, *Factionalism in Isleta Pueblo*.

Received galley and page proof on: Monographs XI and XII.

Accepted for publication:

Monograph XV: Octavio de Costa Eduardo, *The Negro of Northern Brazil, a Study in Acculturation*.

Publication XXI: Helen Roberts and Morris Swadesh, *Nootka Music*.

Arranged for ethnographic sections to be written:

By Viola Garfield for Publication XVIII, *Tsimshian Music*.

By Morris Swadesh for Publication XXI.

Arranged financing for: Monograph XV.

Arranged for special discount to members on; edited and sent to press: Special publication: Paul S. Wingert, *American Indian Sculpture, a Study of the Northwest Coast*.

Respectfully submitted,
MARIAN W. SMITH, *Editor*

ANTHROPOLOGICAL SOCIETY OF WASHINGTON REPORT

The Anthropological Society of Washington at its annual meeting on January 7, 1948, elected the following officers: *President*, William N. Fenton; *Vice-President*, W. Montague Cobb; *Secretary*, Marshall T. Newman; *Treasurer*, John C. Ewers; *Councilors to the Board of Managers*, E. Wyllys Andrews IV, Stella L. Deignan, George McC. Foster, William H. Gilbert, Gordon R. Willey; Representative to the Washington Academy of Sciences, T. D. Stewart.

A report of the membership and activities of the Society since the last annual meeting follows:

Membership:

Life members	1
Active members	62
Associate members	20
Total	83

This represents a decrease of six since last year.

The members elected during the year were, Active Members: Dr. E. W. Andrews, Cdr. Sydney Connor, Mr. J. R. Caldwell, Dr. N. Datta-Majumder, Dr. Phillip Drucker, Miss E. C. Davis, Dr. C. E. Hutchinson, Dr. D. W. Lockard, Dr. W. O. Negherbon, Dr. Philleo Nash, Dr. M. H. Watkins; Associate Members: Dr. G. McC. Foster.

The Society records its deep sense of loss at the death of Dr. Beatrice Bickel, member since 1933.

The report of the Treasurer follows:

Income:

ASW dues collected	$ 112.00	
Back dues (AAA) collected to reimburse ASW for carrying delinquents	5.00	
Interest, Perpetual Building Association	57.38	
Dividends, Washington Sanitary Improvement Co.	33.60	
Dividends, Washington Sanitary Housing Co.	12.00	
Interest, U. S. Savings Bond	12.50	
Sale of Old Series Anthropologists	7.60	
		$ 240.08

Expenditures:

AAA dues paid for secretary and one life member	$ 10.00	
Expenses, speakers	60.00	
Dues, Inter-American Society of Anthropology and Geography	3.00	
Printing and mailing notices	77.03	
Incidental meeting expenses	24.00	
Miscellaneous expenses, Secretary and Treasurer	9.64	
		183.67
Balance		$ 56.41

Assets:

Funds invested in Perpetual Building Association (with interest to Dec. 31, 1947)	$1,956.50	
21 Shares Washington Sanitary Improvement Co. (par value $10 per share)	210.00	
2 Shares Washington Sanitary Housing Co. (par value $100 per share)	200.00	
U. S. Savings Bond, Series G	500.00	
Cash in bank	261.65	
Total as of December 31, 1947		$3,128.15
Total as of December 31, 1946		3,071.74
Increase		$ 56.41
Less bills outstanding:		
To AAA (Subscriptions to American Anthropologist):		
For 1 member, 3 years, 1948–50	$ 15.00	
For 1 member, 1 year, 1948	5.00	
		20.00
Net increase		$ 36.41

Except for the joint meeting with the Washington Academy of Sciences at the Cosmos Club on January 16, 1947, all regular meetings were held at the U. S. National Museum. The Program Committee for the year comprised Dr. Marshall T. Newman, *chairman*, and Dr. Margaret Lantis.

Titles of papers presented before the regular meetings of the Society were:

January 16, 1947, 739th meeting, Waldo R. Wedel, "Archeology and the Missouri River Development Program" (Slides; refreshments served by Washington Academy of Sciences).

February 18, 1947, 740th meeting, R. Ruggles Gates, "Human Ancestry from a Geneticist's Viewpoint." (Slides.)

March 18, 1947, 741st meeting, Preston Holder, "The Motilon Indians, an Untouched Tropical Forest Group in Northwestern South America." (Published in the *Journal of the Washington Academy of Sciences*, Vol. 37, No. 12, 1947.)

April 15, 1947, 742nd meeting, W. Montague Cobb, "The American Negro in the Light of Modern Physical Anthropology." (Slides.)

May 23, 1947, 743rd meeting (joint meeting with the Medico-Chirurgical Society of the District of Columbia), Wilton M. Krogman, "Anthropology and Race Relations."

October 21, 1947, 744th meeting, Father Ernst Worms, "The Natives of Northwestern Australia—a Contemporary Picture of Their Language and Culture." (Sound color film.)

November 5, 1947, 745th meeting, George McC. Foster, "The People of Tzintzuntzan—a Contemporary Study of Social and Economic Adjustment in Mexico." (Color films.)

December 3, 1947, 746th meeting, Eugene C. Worman, Jr., "The Neolithic Period in India—New Evidence on Early Cultural Movements in Asia."

The Society voted to freeze the Perpetual Building fund at $2,000.00 and to add subsequently the interest to dues and other income for running expenses. In this way the scope of activities can be enlarged. It was also decided to govern annual expenditures by a budget estimate made at the start of each year.

MARSHALL T. NEWMAN, *Secretary*

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VIII. Mysterious Script of Easter Island
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X. Syllabic Systems of Writing
XI. Quasi-Alphabetic Scripts

Second Part
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III. Canaanite Branch
IV. Aramaic Branch (incl. Arabic)
V. Non-Semitic Offshooots of the Aramaic Branch
VI. Indian Branch (incl. Saurashtran)
VII. Further-Indian Branch (incl. Korean Alphabet and the Woleai Script)
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After the completion of Volume 6 it was decided to issue future parts as separate Memoirs, assigning to them serial numbers and considering the twenty-eight papers comprised in the six volumes already published as Numbers 1 to 28. Memoirs issued subsequently are the following:

(Continued on next page.)

LIST OF MEMOIRS *(Continued)*

NUMBERS 29-31, 33, 45, 46.—*(Out of print.)*

NUMBER 32.—*A Pueblo Indian Journal, 1920-1921.* BY ELSIE CLEWS PARSONS. 123 pages, 4 plates, 33 figs. Price $1.50.

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